Speakers Differ in Views of Current 'Little Boom'

(Concluded from Page 1, Column 2)

ish stimulus to business, greatly increases the demand for capital and pushes up interest rates.

"What will happen to commodity prices in the next few years? Will they move downward as they did during the periods 1873-1893 and 1929-1932, or upward as from 1896 to 1920, or will they be stable as they were during 1922-1929?

"I shall assume that during the period the United States and other leading countries maintain some form of gold standard. If this should prove false and we should insist on experimenting with managed, inconvertible paper money standards, these would break down and the prophesied advances in commodity prices would be even more pronounced than under a gold standard."

He concluded: "My prophecies are twofold:

"1. We shall have in the United States during the years immediately ahead a pronounced rise in the level of commodity prices.

"2. This rise in the level of commodity prices will be accompanied or followed by substantial advances in the levels of interest rates, which will result in lower market prices for all high-grade long-term bonds than those now prevailing.

"If these prophecies are based upon sound reasoning they should be a matter of serious concern to the entire American public."

Dun & Bradstreet's Mr. Thorp warned:

"Already, I find evidence in isolated spots of the appearance of a 'boom psychology.' With expanding consumer purchasing power, interest rates low and six years of enforced consumer economy behind us, some are seeing no limit to the current upswing.

"If the depression is around the corner behind us, it is also bound to be round the next corner in the future.

"The problems of prosperity," he added, "are more difficult than those of depression. I know of no condition which is more dangerous for a business than a period of sustained high profits."

Mr. Thorp declared that there was a need for economic leadership to meet the problems of prosperity. Chief of these problems, he said, are the "character of the current upswing" and the "long-run trend of increasing government participation in economic activity."

"The trend must be recognized," he said. "Frankly, no honest man can be content with our economic system as it attempts to function today."

E. H. McDermott, Chicago attorney, told the conference that the undistributed earnings tax enacted by the last Congress is an example of the new policy of imposing taxes to bring about social changes rather than for the purpose of raising revenue.

Such a tax tends to drive business to the capital market for new funds because it cannot finance itself out of earnings without bearing a heavy tax burden, Mr. McDermott pointed out.

Frostoff Leases Space for Chicago Offices

CHICAGO—Frostoff Co. of Iowa, manufacturer of an automatic defrosting dehumidifying system for mechanical refrigeration of all types, has leased 585 feet of space in the Merchandise Mart, for its Chicago office.

The display, located on the Mart's house furnishings floor, will be supervised by H. A. Knotts, and will be opened for the Second International Housewares Show, Jan. 4 to 16.

Letters from Service Men

Orders Specifications & Manual

Walter J. Franks
Sales and Service
Repairing and Installation
600 Sixth Ave., Brooklyn, N. Y.
Nov. 9, 1936.

Gentlemen:

Enclosed find money order for $6.50. Kindly send me the REFRIGERATION AND AIR CONDITIONING SPECIFICATIONS BOOK, the REFRIGERATION ENGINEER'S MANUAL, and one year's subscription of the AIR CONDITIONING AND REFRIGERATION NEWS.

Please put my name on your mailing list to receive service data, trade literature, and catalogs.

WALTER J. FRANKS.

Kelvinator Air Conditioning

Macatee, Inc.
Building Materials
2907 San Jacinto St., Dallas
Nov. 11, 1936.

Gentlemen:

We have recently taken on the line of Kelvinator air conditioning and understand that you publish a magazine known as AIR CONDITIONING AND REFRIGERATION NEWS.

You will find attached our check for $3.00 which we understand is a year's subscription to your magazine, and we wish you would kindly send it to Macatee, Inc., P. O. Box 245, Dallas, Texas.

You might also put us on your catalog mailing list and send us any information you might have coming out on air conditioning.

GEO. P. MACATEE, JR.,
President.

Need a Dealer in Los Angeles?

Elster Hardware Co.
Washing Machines—Ranges—Radios
1978 Brooklyn Ave., Los Angeles

Gentlemen:

Please send us the names of manufacturers who like to have dealers in our district, and agencies.

Also kindly send our name to all the manufacturers for catalogs.

FRANK RONALD,
Frigidaire Service Dept.

Refrigeration Books

Alpine Refrigeration Service Co.
2430 Valentine Ave., Bronx, N. Y.
Nov. 9, 1936.

Gentlemen:

Kindly send me a list of books which you have on commercial and household refrigeration and air conditioning along with the ones you are about to publish.

Will you place our name on your mailing list for household and commercial refrigeration and air-conditioning catalogs and trade literature.

CHARLES DERBABIAN.

Wants Bottle Cooler Data

Becker Refrigeration Service
Household and Commercial
Refrigeration Service
1216 Wayne Ave., Dayton

Gentlemen:

Please place our name on your mailing list to receive information regarding commercial refrigeration and air conditioning. We are interested in manufacturers who build bottle coolers and beer equipment with electric refrigeration, also engineering data on air conditioning. JOHN F. BECKER.

Majestic & Grunow Service

Refrigeration Utilities Service
1246 Rogers Ave., Brooklyn, N. Y.

Gentlemen:

Please enter our name on your catalog mailing list.

We specialize in Grunow and Majestic service, handling other makes as well.

Our subscription to the NEWS will be forthcoming shortly. J. W. FURMAN.

Bulletins on Air Conditioning

New Jersey Diesel Institution, Inc.
47 Rector St., Newark, N. J.
Oct. 19, 1936.

Gentlemen:

Kindly place us on the manufacturer's list to receive all bulletins and catalogs on air conditioning and automatic heating. A. G. KNECHT,
Business Manager.

An Original Subscriber

Wells Electric Co.
Electrical Contractors
109 North Main St., Bluffton, Ind.

Gentlemen:

Please put our name on your catalog mailing list.

We are one of the original subscribers to your paper and could not get along without it. C. HELMS.

Gets His Service Manual

White Brothers
Household Appliances, Commercial and Home Refrigeration, Radios and Washing Machines
608 Sixth St., Racine, Wis.
Sept. 28, 1936.

Gentlemen:

I received your MASTER SERVICE MANUAL today and am very much pleased with it, and I know it will be of great assistance in my work.

Will you please include my name on your mailing list for catalogs?

EVERETT F. HANSEN,
Service Dept. Mgr.

Additional Requests for Catalog Mailing Service

White Refrigeration Co.
Sales—Service
1053 51st St., Brooklyn, N. Y.
Oct. 21, 1936.

Gentlemen:

Please place our name on your mailing list so that we can obtain all catalogs for air conditioning, refrigerators, and parts from various manufacturers. We shall appreciate this courtesy. J. H. WHITE.

Greenville Scale & Fixture Co.
209 West Washington St.
Greenville, S. C.

Gentlemen:

Will you please place my name on your catalog mailing list. Thanking you, and anxiously awaiting the next issue of REFRIGERATION NEWS.

LEROY LANGSTON.

C. V. Schade
Refrigeration Service
York Road and Cherry St.
Jenkintown, Pa.

Editor:

Enclosed find check for four ($4.00) dollars—renew my subscription one year and four months.

Please place my name on Independent Service Men's list, also on manufacturer's catalog list.—C. V. Schade, Box 127, Croydon, Pa.

General Engineering Co.
Carrier Air Conditioning—Commercial Refrigeration—Engineering Service on Refrigeration—Sound Equipment—Radios
Midland, Texas

Dear Sir:

Please place our name on your mailing list so that we may receive catalogs from various manufacturers.

F. A. SMITH.

Please put my name on your catalogue mailing list. I have been a consistent reader of the NEWS for the past two months and find it very interesting. Each week I look forward to the coming of the NEWS.—D. O. Taylor, 406 Fifth Ave., Bradley Beach, N. J.

I have received my MASTER SERVICE MANUAL, and I am certainly pleased with it, for it was far more than what I had expected. But upon reading my manual I discovered that Chapter 5 is not all there, from page 80 to 121 is missing. Please inform me if I could get the part that is missing.—Mark W. Wanty, General Delivery, Ypsilanti, Mich.

Add These Names to List of Service Men

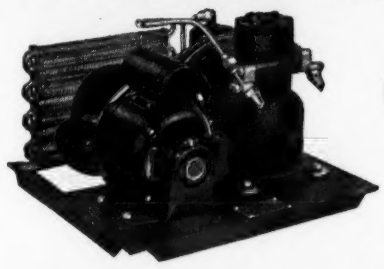
William L. Haid, Electrical Refrigeration & Service, 107 Smith St., Lynbrook, N. Y.

H. C. Geerlofs & Zoon, Scheveningen, Zeekant 43, Scheveningen, Holland.

The Buyer's Guide

Special rates apply to this column only. Write Advertising Dept. for full information.

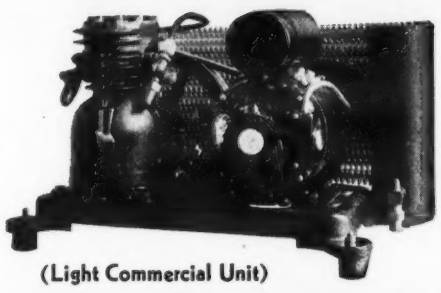
CONDENSING UNITS and COMPRESSORS



FOR HOUSEHOLD REFRIGERATION BY

JOHNSON MOTOR CO.
Waukegan, Ill.

MANUFACTURERS OF THE WORLD FAMOUS SEA HORSE OUTBOARD MOTORS



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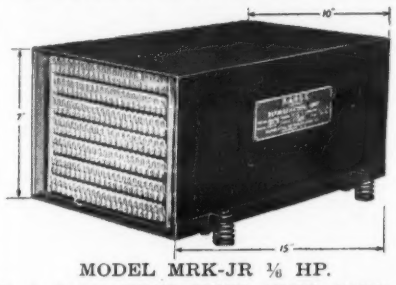
QUALITY-BUILT COMPRESSORS and CONDENSING UNITS
All bearings diamond bored. Positive lubrication of parts by newly developed process plus forced feed lubrication in all models.
Sizes: 1/6, 1/5, 1/4, 1/3 h.p.
Write for prices

TECUMSEH PRODUCTS CO., Tecumseh, Mich.

Commercial Condensing Units



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U. S. Patents 1897907—1969237—2018067—2043176

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Commercial Refrigeration Co., Inc.
55 South Avenue Rochester, N. Y.

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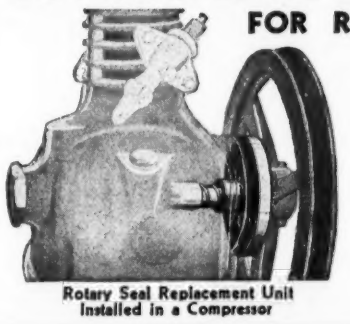
FOR REFRIGERATOR COMPRESSORS



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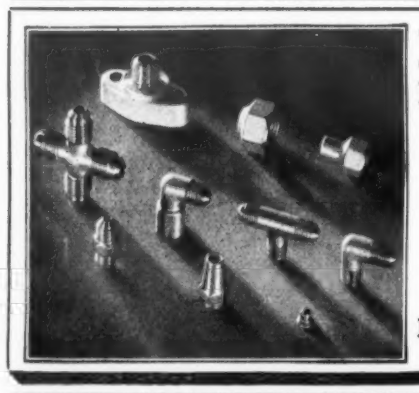

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Foreign Trade Number

THE NEWSPAPER OF THE INDUSTRY

AIR CONDITIONING AND

WRITTEN TO BE READ ON ARRIVAL

REFRIGERATION NEWS

Established 1926 and Registered U. S. Patent Office as Electric Refrigeration News
Member Audit Bureau of Circulations. Member Associated Business Papers.

VOL. 19, NO. 14, SERIAL NO. 402
ISSUED EVERY WEDNESDAY

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DETROIT, MICHIGAN, DECEMBER 2, 1936

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THREE DOLLARS PER YEAR
25 CENTS PER COPY

10-Mos. Sales Of Refrigerators Over 2,000,000

Export Sales Up 31,000 Units Over 1935 Period; October Sales Better

DETROIT—Sales of household electric refrigerators by manufacturers to distributing outlets through October passed the 2,000,000 units mark, according to estimates made by AIR CONDITIONING AND REFRIGERATION NEW.

When October sales of 57,200 units pushed the figure for 10 months to 2,003,700 units, it marked the first time in the history of the industry that the 2 million unit mark had been attained in manufacturers' sales for any one year.

Sales reported in October by 15 manufacturers who are members of the Household Section, Refrigeration Division of National Electrical Manufacturers Association (Nema) totaled 53,191 units, bringing the total sold by the Nema group for the year to 1,863,474 units.

The estimated sales by manufacturers in October this year were a few hundred units greater than the number sold in October, 1935.

Number of refrigerators sold by manufacturers for export (including Canada) for the 10 months of this year totaled 154,436 units, as compared with 123,593 units exported during all of 1935.

Sales reported by the Commercial Section, Refrigeration Division of Nema, totaled 9,365 units for the month of October.

Walker New Crosley Merchandise Head

CINCINNATI — G. Earle Walker, former sales promotion manager of Crosley Radio Corp., has been appointed merchandise manager.

In his capacity Mr. Walker, who has had many years experience as an appliance executive, will give assistance to Crosley distributors and dealers in expanding sales activities, and in setting up Crosley retail sales organizations throughout the country.

Lenford Harrison, formerly connected with the Eagle Picher Lead Co., has been named head of the dealer department. William G. Soner has been appointed district manager for a Western district, and will make his headquarters in St. Louis.

Ennis Will Represent Copeland in West

DETROIT—Oliver D. Ennis, an industry pioneer in the distribution of commercial refrigeration products, has been appointed Western commercial representative for Copeland Refrigeration Corp. with headquarters in Los Angeles at 2723 W. 73rd St.

The territory which Mr. Ennis will cover includes the eight states of Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, and Washington. In addition to his headquarters in Los Angeles, Mr. Ennis is planning to open another office in San Francisco in the near future.

Mr. Ennis believes that he was the first distributor of low-pressure commercial refrigerating machines in this country. He started in the business in 1924 as a distributor for Nizer in Detroit, the name of the distributing concern being "Zerofier Corp."

Stewart-Warner Opens Chicago Branch Office

CHICAGO — Stewart-Warner Corp. has opened a new factory branch office here at 2545 South Michigan Ave., to serve the northern Illinois and Indiana territories. The office will be operated under the name of Stewart-Warner Distributors Co.

The building, fronting 70 feet on Michigan Ave. and containing 12,000 sq. ft. of floor space, was especially

(*Concluded on Page 2, Column 5*)

'Kitchen-Proved' to Be Westinghouse Theme in 1937

By T. T. Quinn

MANSFIELD—"Kitchen-Tested" will be the catch-phrase back of Westinghouse Electric & Mfg. Co.'s 1937 line of household electric refrigerators, which is being introduced to 500 distributors and their representatives during the first two days of a five-day convention here this week.

The convention, which opened Monday, will continue through Friday. Household and commercial refrigeration, ranges, water heaters, and all-electric kitchens will hold the center of the scene during the first four

(*Concluded on Page 36, Column 3*)

Hearing on Revised N.Y. Code Friday

NEW YORK CITY—What is hoped to be the final hearing on New York City's much-wrangled-over ordinance relating to refrigerating systems will be held at 2 o'clock Friday afternoon, Dec. 4, in room 1013 of the Municipal Building, according to notices sent out last week by Deputy Fire Commissioner Francis X. Giaccone.

Bureau of Combustibles officials and C. K. Michaels, who has drawn up the code, have wisely set the date for the hearing during the week of the ASRE annual meeting, when prominent industry engineers congregate in New York City.

It was at the time of the 1935 ASRE winter meetings that the first hearing was held on the proposed revised code. Several more hearings were

(*Concluded on Page 2, Column 1*)

Baker Representative Flies to Manila on Conditioning Job

OMAHA — Forecasting a method which American manufacturers may take to keep abreast of expanding refrigeration and air-conditioning business in foreign countries, J. Neal Clemmer of the Baker Ice Machine Co. last month booked passage on the China Clipper and made a 10,000 mile flight by air to consult with Baker's Manila representative on a refrigeration project. He left the Omaha airport on Nov. 20 for San Francisco.

Probably the first American refrigeration engineer to travel by air to Manila, Mr. Clemmer's trip was hastened by current sales promotion projects in the Philippine air-conditioning field. They will be undertaken through the Manila Machinery and Supply Co., Baker's Philippine representative.

During his contemplated three-months sojourn in the tropics, Mr. Clemmer plans to devote considerable scientific study to air-conditioning and refrigeration problems arising from meteorological conditions in the Philippines and the torrid zone's peculiar style of architecture.

Foreign Markets

Foreign markets for air conditioning and refrigeration form the next big opportunity for the expansion of the industry, in the opinion of many competent observers. This issue of the News is devoted to a study of many of these markets abroad, based on first-hand information.

Staff members have interviewed consuls and trade commissioners, the speeches and discussions of "export experts" at the National Foreign Trade Conference in Chicago are reported in detail—together with a number of complete papers which were read before this convention, and news stories concerning the activities of foreign distributors comprise the main body of the issue.

A considerable portion of material prepared for this issue has been held over; and much of this—particularly a set of tables showing refrigeration and air-conditioning exports to all parts of the world during the last three years—will appear in the next issue.

A feature of this number is the large number of letters from foreign subscribers. Heading the list is one from L. M. Rifa, Frigidaire distributor in Spain, who entertained the editor of the News in Barcelona when he stopped there on his recent seven month's trip around the world in search of information on foreign markets.

This letter from Mr. Rifa, which appears immediately below, is the first news to reach this country concerning the refrigeration situation in Spain since the beginning of its Civil War.

First News from War-Torn Spain

Anonima Rifa Anglada
Frigidaire Producto General Motors
Paseo de Gracia, 23
Barcelona
Nov. 2, 1936

Editor:

It is with pleasure we are replying to your favor of the 15th inst. and in the first place we very much regret that the circumstances under which we are living do not permit us to give you full details such as we would have had pleasure in giving you in normal times.

As you know we are in the middle of a civil war which has caused the volume of our sales to descend almost to zero, a fact which we lament even more when we consider that the present year commenced very well. Until this civil war broke out we had been able to sell 592 household cabinets, 272 commercial installations and 85 ice cream cabinets.

During the war we have sold 1 ice cream cabinet, 3 commercial installa-

(*Concluded on Page 36, Column 5*)

D'Arcy Appointed Universal Cooler Sales Manager

DETROIT—H. A. D'Arcy, veteran electric refrigeration executive, has been appointed domestic sales manager of Universal Cooler Corp., by F. S. McNeal, president. The announcement was made at a recent luncheon at which policies for the company's fifteenth anniversary year were outlined.

Mr. D'Arcy has been central domestic regional sales manager at Universal Cooler during the past year, and has behind him a long record of executive sales work with Kelvinator Corp., Westinghouse Electric & Mfg. Co., and Stewart-Warner Corp.

Organizer of the first retail commercial sales department for Kelvinator at the Detroit branch 12 years ago, Mr. D'Arcy later prepared the first commercial sales manual for this company. His next position with Kelvinator was that of Western utility manager.

With Westinghouse Mr. D'Arcy held the position of first utilities sales manager. He later was employed in similar activities with Stewart-Warner Corp.

T. S. Pendergast continues as commercial sales manager of Universal Cooler Corp., President McNeal announced.

Kelvinator Reports $1,552,162 Profit

DETROIT — Kelvinator Corp. reports a net profit of $1,552,162.93 for the fiscal year ending Sept. 30, as compared with a net profit for the preceding fiscal year of $1,199,445.17.

The profit for this year includes dividends from subsidiary corporations, but does not include $136,922.94 of the corporation proportions of the undistributed earnings for 1936 of these subsidiaries.

An extra dividend of 50 cents a share in addition to the regular quarterly dividend of 12½ cents per share, payable Jan. 2, 1937 to stockholders of record Dec. 10, was voted by the board of directors. This disbursement to stockholders will aggregate $725,000.

Membership Extended by Chicago Refrigeration Service Association

CHICAGO—All refrigeration service companies listed in the Chicago classified telephone directory were invited to the first open meeting of the Refrigeration Service Association of Chicago held at the Palmer House Tuesday evening, Nov. 24.

Previously the membership of the organization has been limited to a dozen and a half large concerns which included the installation and service departments or subsidiaries of the principal refrigeration equipment manufacturers.

L. C. Kohlman, until recently vice

(*Concluded on Page 4, Column 3*)

Nations Look to U.S. as Business Recovery Leader

World Trade Conference Sees Large Market for American Products

By George F. Taubeneck

CHICAGO—All nations of the world look to the United States leadership in commercial recovery, and acknowledge the superiority of the products of American industry, it was brought out at the 23rd National Foreign Trade Convention, conducted Nov. 18-21 at the Stevens hotel.

In a concentrated series of sessions which embraced morning, luncheon, afternoon, and dinner meetings, representatives of commercial interests in many foreign countries, of American corporations doing a large export business, and of government bureaus traded experiences, knowledge and ideas in the biggest convention of its kind ever held.

Almost unanimously the distinguished speakers declared that the present opportunity for expansion of American trade abroad is unparalleled in the history of the nation.

At the banquet Thursday night President Eugene P. Thomas of the National Foreign Trade Council read the following message from President Franklin D. Roosevelt:

"Working together, we of the government and you of business will help to make the nations of the world more prosperous, more contented, and hence more likely to be at peace than in conflict with each other."

Secretary of State Cordell Hull also expressed the opinion that expansion of foreign trade would lead the way toward international peace. Said he:

"I may point to the definitely encouraging trend of our international

(*Continued on Page 23, Column 1*)

Canadian Companies Form Association

TORONTO, Ontario, Canada—Canadian Refrigerating and Air Conditioning Association has been formed here.

After months of preliminary meeting and planning, the Dominion Charter for the association was finally received, clearing the way for completion of organization details.

Early in November, a series of six meetings was held here to carry out the procedure necessary to bring the organization into legal existance.

Officers were elected as follows:

(*Concluded on Page 2, Column 5*)

350 Distributors See New Airtemp Line

DAYTON—Meeting for a three-day convention here recently, 350 distributors and dealers of Airtemp, Inc.'s nation-wide selling organization viewed new Airtemp air-conditioning equipment, saw it in production, and had outlined for them the program by which it will be merchandised during 1937.

Public announcement of the new equipment will be made later.

I. C. Baker, vice president and operating manager of Airtemp, Inc., opened the business session held at the Engineers Club. He announced

(*Concluded on Page 4, Column 3*)

Moock Adds Cleveland to Westinghouse Territory

CLEVELAND—Moock Electric Supply Co. is now handling the distribution of Westinghouse electric refrigerators in Cuyahoga County, embracing the Cleveland metropolitan area.

This firm has been in the electrical wholesaling business for 35 years. Main headquarters are in Canton. Moock Electric Supply has been handling Westinghouse refrigerators in Canton, Youngstown, and Akron for the past few years.

Master Catalog of Air Conditioning & Refrigeration to Appear in March

Business News Publishing Co. announces the coming publication of a MASTER CATALOG OF AIR CONDITIONING AND REFRIGERATION which is planned to give complete market coverage of the entire industry. It will feature equipment, accessories, parts, materials, supplies, and tools. Controlled circulation (free) of 50,000 copies is being planned to reach manufacturers, distributors, jobbers, dealers, contractors, installation and service companies, and large buyers.

So great has become the demand for catalog information of all kinds, and so great the demand for various kinds of lists that the publication of a complete catalog will be an important service to all factors of the industry.

Publication date has been set for March 1, 1937. Readers of the NEWS are urged to mail their registrations early to receive a copy of this free catalog.

Revised N. Y. Code Bars Soft Solders and Saddle Fittings; Regulations on Air Ducts And Oil-Coated Filters Changed

(Concluded from Page 1, Column 2)

held in the course of the next two months, and then another revision of the code was made, on which a hearing was held April 1 of this year.

The current hearing will discuss a new revision of the code dated Nov. 24, 1936, and which incorporates a number of changes made following the April 1 hearing.

Most sweeping change was made with reference to Section 224—"Piping, Tubing, Fittings, Supports, Filters, and Air Ducts." Under the terms of the newest revision, no soft solder joints are permitted in refrigerant lines, no saddle fittings are permitted, and new regulations are set up governing construction of ducts and use of oil-coated filters.

Under the "Public Buildings" parts of the "Permissible Buildings" section (No. 219) more stringent rules are laid down concerning the matter of isolating the machinery room in which a system employing a flammable or irritant refrigerant is located.

The provision dealing with the use of systems of irritant and flammable refrigerants in a department store has been liberalized to the extent that hermetically sealed machines employing not over 6 lbs. of refrigerant need not be placed in a room cut off from the rest of the building, as is required otherwise.

Other provisions which have been changed include those having to do with open flames, testing requirements, and safety devices.

Following are the sections in which changes have been made, as they appear in the revision of the code issued Nov. 24 of this year:

Sec. 217. **Operation and Supervision:**

(a) No refrigerating system containing more than 100 pounds of refrigerant shall be operated in any building except under the personal supervision of either a duly licensed engineer or a person who has obtained a certificate of qualification to operate such a system from the Board of Examiners in accordance with the rules and regulations of the Board of Buildings. If the refrigerating system contains more than 100 pounds, but not more than 200 pounds of refrigerant and is fully automatic, only the occasional inspection of a licensed engineer or a person having a certificate of qualification shall be required in each 24 hour period. Such engineer or person having a certificate of qualification shall not supervise or operate refrigerating equipment in more than one building except in buildings comprising a group located in the same block and under the same management.

Sec. 219. **Permissible Locations**

1. Public Buildings.

(g) Systems in public buildings employing an irritant and/or flammable refrigerant except as specified in paragraphs (d), (e), and (f), shall be confined in an unpierced fireproof machinery room and completely cut off from the rest of the building and with entrance and exit only in the outer building wall. There shall be no other openings of any kind in the building wall from the basement to the roof on that side of the building in which the entrance of machinery room is located. The refrigerating machinery room shall be provided with independent mechanical means of ventilation as specified in Section 221, except that an exhaust duct for the removal of such air shall be provided on the outside of the building, the outlet of which shall terminate above the roof. Pipes containing the second brine or water of a Double Indirect Open Spray Vented Method of refrigeration may pierce the interior walls of the refrigeration machinery room, provided such pipes are externally sealed in the walls through which they pass. Only the Double Indirect Open Spray Vented Method shall be used.

(m) Brine or water cooled by an irritant and/or flammable refrigerant may be obtained from a system external to a Public Building for refrigerating purposes or for air cooling such building, provided the indirect closed surface vented method of refrigeration and/or the double indirect open spray vented method of refrigeration is used for cooling brine or water in a space external to and completely cut off from such building.

2. Residence Buildings.

(g) Not more than six pounds of an irritant and/or flammable refrigerant shall be used in a refrigerating system of the sealed type in a residence building for the purpose of condensing a non-flammable and non-irritant refrigerant used for air-cooling by the direct method of refrigeration.

3. Business Buildings.

(f) No refrigerating system or systems for sale or demonstration purposes containing an irritant and/or flammable refrigerant, shall be installed or stored or operated in a department store unless such system or systems be installed or stored or operated in a room cut off from the rest of the building by tight partitions and tight self-closing door or doors. This provision shall not apply to hermetically sealed unit systems containing not more than six (6) pounds of an irritant and/or flammable refrigerant.

(k) (1) Systems employing an irritant and/or flammable refrigerant in a department store, except as specified in paragraphs (f) and (o) shall be confined in an unpierced fireproof machinery room completely cut off from the rest of the building and with entrance and exit only in the outer building wall. There shall be no other openings of any kind in the building wall from the basement to the roof on that side of the building in which the entrance of machinery room is located. The refrigerating machinery room shall be provided with independent mechanical means of ventilation as specified in Section 221, except that an exhaust duct for the removal of such air shall be provided on the outside of the building, the outlet of which shall terminate above the roof. Pipes containing the second brine or water of a Double Indirect Open Spray Vented Method of refrigeration may pierce the interior walls of the refrigeration machinery room, provided such pipes are externally sealed in the walls through which they pass. Only the Double Indirect Open Spray Vented Method shall be used.

4. General Requirements.

(b) No refrigerating system employing more than six (6) pounds of a hydrocarbon refrigerant shall be installed and/or operated in any building.

(c) All refrigerating systems shall be maintained in a cleanly manner, free from accumulations of oily dirt, waste and other debris and shall be kept readily accessible at all times.

Sec. 220 (b) of the original code is omitted here.

Last portion of Sec. 221 (c) of original code is omitted here.

Sec. 222. **Open Flames and Electrical Control Devices:**

1. Open flames.

No open flame or any device to produce an open flame or electric switch other than an oil immersed or hermetically sealed type of switch shall be permitted in a refrigerating machinery room in which an aggregate of more than ten (10) pounds of a flammable refrigerant is employed.

2. Electrical control devices.

(b) Systems containing more than one hundred (100) pounds of refrigerant shall have the control for mechanical means of ventilation located outside of the refrigerating machinery room.

(c) Each electrically operated system containing over twenty (20) pounds of refrigerant shall be protected by a pressure limiting device located on the high pressure side of the system, set to stop the pressure imposing element at a pressure lower than the safety valve setting.

Sec. 223. **Testing:**

(a) Every part of any refrigerating system, except pressure gauges and control mechanism, erected and/or charged with a refrigerant on the premise where such system is to be used shall be tested and proved to be tight before being operated. The high and low pressure sides of such refrigerating system shall be tested with a pressure not less than the values shown in Table No. 3, for the high and low pressure sides, for the particular refrigerant employed in such system. A dated declaration of such test signed by the licensed installer shall be mounted in a frame protected by glass and posted in the machinery room.

Sec. 224. **Piping, Tubing, Fittings, Supports, Filters, and Air Ducts.**

1. Piping, Tubing, Fittings, and Supports.

(a) No soft solder joints shall be permitted in refrigerant discharge, liquid, or suction mains erected on the premise. Only welded, brazed, or mechanical joints shall be employed for such mains.

(b) The materials used in a refrigerating system shall be unaffected by the refrigerant used. Piping or tubing shall be of a thickness adequate for the pressures of the refrigerant used as stated in Sec. 225, Table No. 3, after joints are made. All fittings shall be of the full body type and no saddle fittings for attachment of pipe lines shall be permitted. Fittings may be of forged, wrought, or cast non-porous materials.

(c) All piping, tubing, or vessels containing the refrigerant shall be adequately supported in a workmanlike manner by metal hangers or other fireproof material.

(d) Piping or tubing containing a refrigerant shall not be placed in a hall, lobby, stairway, elevator or dumbwaiter shaft, except piping or tubing passing across a hallway if there be no joints in the section in the hallway and it be contained in a rigid conduit.

(e) Liquid level gauge glasses, except those of the bull's eye type, shall have automatic closing shut-off valves and such glasses shall be adequately protected against injury by slotted metal casings.

2. **Filters and Air Ducts of Air Cooling Systems Other Than Unit System Air Coolers.**

(a) All inlets to duct openings both inside and/or outside of a building shall be protected by a substantial metal grille or screen, with openings of not more than one-quarter inch in area. They shall be kept free of combustible materials.

(b) Ducts shall be made of non-combustible materials, supported by metal hangers, and substantially designed. No combustible linings inside or outside of ducts shall be used.

(c) Clearance between metal ducts and stored materials shall be not less than six inches and to combustible construction not less than one inch.

(d) When a duct passes through or pierces a fire wall or fire partition, it shall be protected by an automatic fire door or damper on both sides of the fire wall or fire partition.

(e) When ducts pass through floors and serve more than one story, approved fire dampers shall be provided at the outlet and inlet openings on branches to or from such main vertical ducts.

(f) In all duct systems the fan or fans shall be arranged to shut down automatically when the temperature of the air in the system reaches 150° F. For this purpose the actuating portion of a satisfactory hand resetting thermostatic device shall be located in both the suction and discharge sides of the duct system at a suitable point close to each fan.

(g) Air filter frames, cells, or enclosures shall be made of non-combustible materials. The filter media of any air filter shall not support its own combustion or flame in air. Air filters shall be tested and approved and shall bear the stamp of approval of a nationally recognized laboratory satisfactory to the Fire Commissioner.

(h) Liquid adhesive coatings shall have a flash point above 350° F. as determined in an open cup tester and shall not decompose in a fire into toxic vapors.

(i) Oil tanks into which removable oil filters are dipped shall be located outside a building or in a separate fire resistant room. Such tanks shall be of metal, equipped with tight fitting covers and shall be kept closed when not in use.

(j) When filters are flushed with oil pumped from a tank at the base of filter to top and allowed to flow down over filter media, the system shall be arranged so that the filters cannot be flushed while the fan is in operation.

(k) All air filters shall be kept free of excess dust and combustible materials. If of the automatic oil type, sludge shall be regularly removed from the oil reservoir and if of the replacement media type the filter media shall be changed at proper intervals to eliminate excessive dust deposits.

(l) Air filters constructed of combustible materials installed prior to the adoption of this article and for which a permit has been issued, shall be protected by a fire door or damper located immediately adjacent to the filter on the outgoing air duct which will automatically close by the melting of a fusible link at not more than 165° F.

(m) No evaporator, piping or other vessels containing refrigerant shall be located in the air stream between the fire door or damper and the air filters as set forth in paragraph (1).

(n) In recirculating systems no air shall be recirculated from any space in which operations are carried on that produce or result in objectionable quantities of vapors, flyings or dust.

(o) Air washers, blowers, ducts, etc., used for air cooling shall be partitioned off from the refrigerating machinery room or made air-tight to prevent escaped refrigerant in the machinery room from entering the air cooling system.

Sec. 225. **Safety Devices:**

(g) For refrigerants not listed in Table No. 3, the test pressure for the high pressure side shall be not less than the saturated vapor pressure of the refrigerant at 150° F. and the test pressure for the low pressure side shall be not less than the saturated vapor pressure of the refrigerant at 115° F. In no case shall the test pressure be less than 30 lbs. gauge per square inch.

This provision has been added to the original code.

Sec. 226. **Operating Precautions:**

4. Charging and Discharging Refrigerants.

(e) No refrigerant shall be transferred from one container to another except as provided in paragraph (d) of this section.

Officers Elected by Canadian Group

(Concluded from Page 1, Column 5)

president, C. W. Vollmann, president of Linde Canadian Refrigeration Co. Ltd., Montreal; executive vice president and honorary secretary, Jardine McKerlie, editor of *Refrigeration and Air Conditioning*, Gardenvale, Quebec.

First vice president, C. W. Cannon, general sales manager, Frigidaire Corp., Toronto, Ont.; 2nd vice president, E. L. Dilworth, manager, Canadian Blower and Forge Co. Ltd., Kitchener, Ont.; 3rd vice president, G. Inglis, chief engineer, National Breweries Ltd., Montreal, Quebec.

Chairman finance committee, J. J. Page, service manager, Kelvinator of Canada Ltd., Montreal; chairman of papers committee, G. H. Jenkens, mechanical superintendent, Toronto Terminal Warehouse, Toronto, Ont.; chairman of membership committee, R. H. Loch, general manager, J. H. Lock & Sons Ltd., Toronto, Ont.

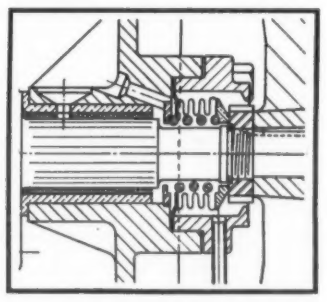
These officers, with two councillors elected from each of the Toronto and Montreal branches, form the executive council of the Association. Later, a representative will be elected from each new branch, and automatically will stand in the executive council.

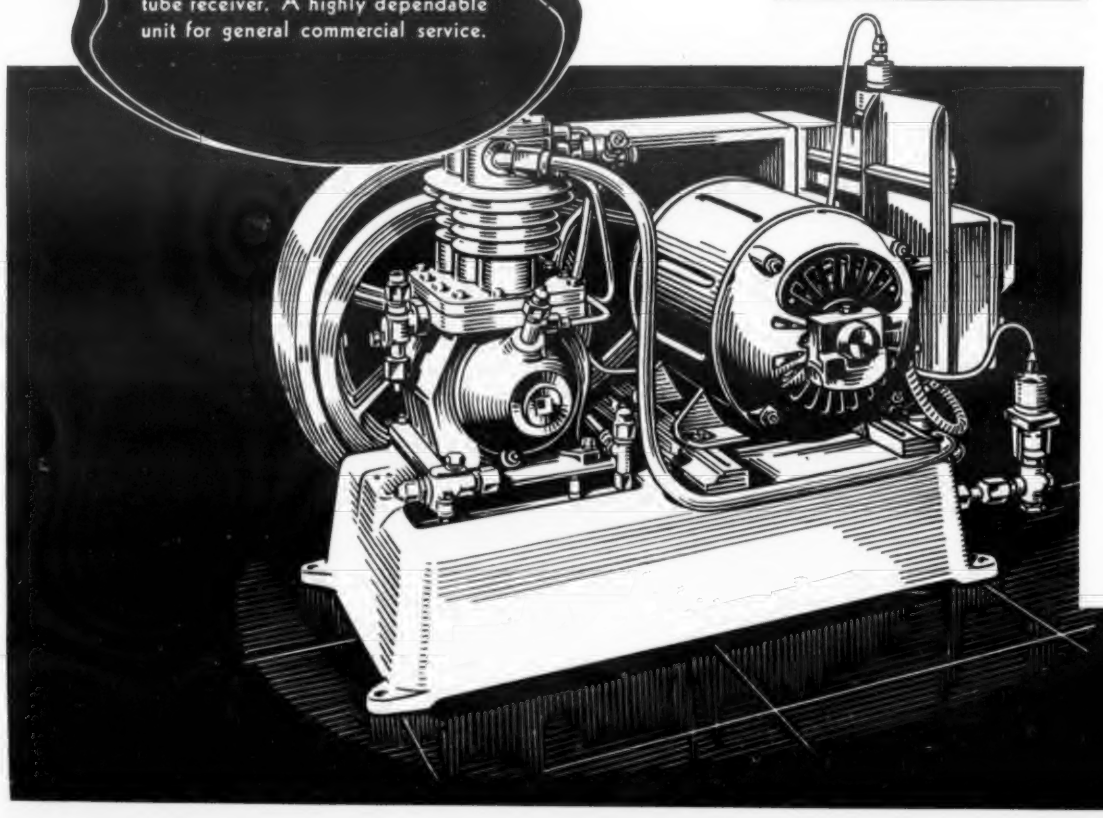
Membership certificates and branch charters have been presented to the individual members and branches.

the HIGHER the PRESSURE
the tighter the seal

M & E
COMPRESSOR UNIT
C-725 W.M.C.

1 H.P. 2-cylinder compressor with water cooled heads and shell and tube receiver. A highly dependable unit for general commercial service.





To positively prevent leaks at the crankshaft seal, with a minimum of wear and lost power—M & E engineering ingenuity reversed the whole field of thought and practice.

As shown in the diagrammatic drawing above—instead of employing the conventional Sylphon seal assembly which requires a spring heavy enough to prevent leakage against high crankcase pressures, (up to 125 lbs. spring pressure)—the M & E Sylphon seal assembly is reversed to require a spring only heavy enough to prevent air leakage into the systems below atmospheric pressure, (35 lb. spring pressure). The lessened friction and wear thus imposed on the seal assembly offers a major economy in power, wear and service attention.

Moreover—the easy removal of both the Sylphon seal wear plate and the seal nut, (which is the seal bearing surface on the shaft) for lapping or replacement—simplifies the servicing problem tremendously.

Another reason why users and dealers, alike, turn to "M & E for the plus values in refrigeration."

M & E Compressor units serve every refrigeration need—forty-five models from ¼ h. p. to 15 h. p.; water and air cooled; electric motor and gas engine driven. Complete details on request.

MERCHANT & EVANS COMPANY
Philadelphia, Pa., U.S.A. • *Plant at Lancaster, Pa.*

MERCHANT & EVANS
COMMERCIAL COMPRESSORS

M&E EST. 1866

S-W Opens Chicago Branch Office

(Concluded from Page 1, Column 1)

sq. ft. of floor space, was especially designed a few years ago for display purposes, and is said to be one of the most attractive in this section of the country.

Most impressive of its interior decorations are the 10 mirror columns which extend from the base of the wall to the 15-ft. ceiling. Topping each of the columns is a bas-relief mural in silver, typifying some branch of industry.

Display floors are free from posts, and radio and refrigerator models are so displayed as to give visitors a comprehensive view of S-W products.

A complete service department, covering both refrigerators and home and auto radios, will be maintained in the branch, under the supervision of a trained factory engineer.

Thomas H. Maginniss, for the past year district manager for Stewart-Warner in the Chicago territory, has been appointed manager of the new distributing organization.

Establishment of the branch office, it is anticipated, will result in more efficient handling of orders, quicker shipments, and closer cooperation with Illinois and Indiana dealers.

Performing a Service of Constantly Increasing Value to the Entire Industry

WITHIN the past few years, a new group of business men has come into the picture and become an important factor in mechanical refrigeration and air conditioning.

The jobber of refrigeration parts and supplies today plays an important part in serving the *entire industry*.

With millions of household and commercial refrigerators and thousands of air conditioning systems in daily use, service and replacement has become *important business*. In many ways the mechanical refrigeration industry is comparable to the automotive field where the value of service has long been recognized.

Into this industry the independent service engineer, the independent installation and service company is growing rapidly. This group is equipped and prepared to service all makes, all models promptly and economically. They also serve the installation needs on new air-conditioning and commercial equipment for factory authorized distributors and dealers.

Service companies, as well as factory distributors and dealers, require a quick source of supply, and independent jobbers have set up in business in most important market centers to supply this need. The refrigeration supply jobber carries in stock parts and supplies to meet the quick daily requirements of these organizations.

The jobber has built up a *large* and *loyal* clientele. He is in close personal contact with his customers and knowing the needs of each specific territory, renders them many valuable services.

It was only a year ago that independent refrigeration supply jobbers first met and formed an association for the betterment and expansion of the business as a whole. Standards of practice and qualifications for membership were adopted.

Within the past year, much progress has been made. Service has been enlarged. Trade practices have been improved. At the annual convention held a few days ago a stronger unity of purpose and service was much in evidence. This movement is definitely for the *good of the refrigeration industry* as a whole.

For the manufacturer, the jobber performs an important service that assists in keeping the older models in satisfactory operation. He also serves quickly the urgent needs of each manufacturer's factory authorized outlets on many items necessary for efficient installation of new commercial and air-conditioning equipment. This helps the manufacturer to retain the good will of countless customers toward his product and trade name.

For authorized distributors, dealers, and *air-conditioning contractors*, the jobber eliminates the costly maintenance of large inventories on many items essential for their erection departments. Quick, effective service is rendered due to close personal contacts.

To the service company, the jobber offers a convenient and independent source of supply which makes it possible for the service company to conduct an independent business on a satisfactory profit basis.

To the public, the jobber renders a service that contributes to longer life and lower cost of operation of mechanical refrigeration.

The constantly increasing value of the jobber to the *entire industry* has become apparent. The steeply up-curving chart of refrigeration supply jobbers' business volume in evidence indicates the necessity of a jobber's position in this new and fast-growing industry.

Members of the Association have pledged themselves to the new obligations of improved service and this list of members will be published in another advertisement soon to appear in this same publication.

NATIONAL REFRIGERATION SUPPLY JOBBERS ASSOCIATION

Headquarters: 2707 David Stott Building, Detroit, Mich.

53,191 Household Electric Refrigerators Sold in October, 1936, by 15 Firms

The following 15 member companies of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) reported household refrigerator sales for October, 1936: Apex Electrical Mfg. Co., Crosley Radio Corp., Fairbanks, Morse & Co., Frigidaire Corp., General Electric Co., Gibson Electric Refrigeration Co., Kelvinator Corp., Leonard Refrigerator Co., Norge Corp., Servel, Inc. (export only), Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co. Member companies not reporting included: Jomoco, Inc., Merchant & Evans Co., and Sparks-Withington Co.

The sales of the reporting companies do, however, include units manufactured for the following concerns: Major Appliance Corp., Montgomery Ward & Co., Potter Refrigerator Corp., and Sears, Roebuck & Co.

Lacquer (Exterior) Cabinets Complete	SALES FOR OCTOBER, 1936 Domestic Quantity	Domestic Value	Canadian Quantity	Canadian Value	Other Foreign Quantity	Other Foreign Value
1. Chest	493	$ 22,911	4	$ 194	400	$ 20,585
2. Less than 3 cu. ft.	67	4,038	....	....	....	....
3. 3 to 3.99 cu. ft.	1,457	85,214	130	10,911	4,288	244,301
4. 4 to 4.99 cu. ft.	8,822	569,744	541	37,972	2,403	152,086
5. 5 to 5.99 cu. ft.	6,747	506,405	216	17,429	1,164	91,645
6. 6 to 6.99 cu. ft.	10,081	793,735	74	5,584	1,090	98,131
7. 7 to 7.99 cu. ft.	3,370	366,857	34	3,627	351	37,590
8. 8 to 9.99 cu. ft.	713	73,563	....	....	87	10,744
9. 10 to 12.99 cu. ft.	....	....	....	....	....	....
10. 13 cu. ft. and up	....	....	....	....	1	222
11. Total Lacquer	**31,750**	**$2,422,467**	**999**	**75,717**	**9,784**	**655,304**
Porcelain (Exterior) Cabinets Complete						
12. Up to 4.99 cu. ft.	122	9,164	7	610	23	1,863
13. 5 to 5.99 cu. ft.	1,195	101,643	8	702	173	15,053
14. 6 to 6.99 cu. ft.	4,345	383,037	3	296	151	14,963
15. 7 to 7.99 cu. ft.	1,530	175,085	6	680	132	15,468
16. 8 to 9.99 cu. ft.	908	121,741	6	734	196	27,142
17. 10 to 12.99 cu. ft.	182	32,981	2	363	29	4,954
18. 13 cu. ft. and up	133	30,648	1	210	28	6,801
19. Total Porcelain	**8,415**	**854,299**	**33**	**3,595**	**732**	**86,244**
20. Total—Lines 11 and 19	**40,165**	**3,276,766**	**1,032**	**79,312**	**10,516**	**741,548**
21. Separate Systems ¼ Hp. or Less	100	3,026	5	179	1,082	62,596
22. Separate Household Evaporators	121	2,742	16	223	154	3,218
23. Total—Lines 20, 21, 22	**40,386**	....	**1,053**	....	**11,752**	....
24. Condensing Units ¼ Hp. or Less	332	20,697	5	298	160	9,241
25. Cabinets—No Systems	228	11,502	....	....	88*	2,215*
26. Total Household	....	**$3,314,733**	....	**$80,012**	....	**$814,388**

*Includes sales and credits reported by more than one company.

New York Leads State Sales for October

This summary includes adjustment figures reported by several companies which do not represent their actual October sales but are corrections to be applied to their first nine months totals to give their correct total apportionment among the various states for 10 months.

States and Territories	Quantity of Household Low Sides
Alabama	254
Arizona	102
Arkansas	61
California	5,552
Colorado	117
Connecticut	878
Delaware	99
Dist. of Columbia	405
Florida	2,067
Georgia	391
Idaho	55
Illinois	2,502
Indiana	841
Iowa	361
Kansas	221
Kentucky	341
Louisiana	608
Maine	39
Maryland	474
Massachusetts	1,364
Michigan	1,601
Minnesota	542
Mississippi	141
Missouri	428
Montana	51
Nebraska	50
Nevada	85
New Hampshire	195
New Jersey	1,916
New Mexico	15
New York	8,458
North Carolina	269
North Dakota	3
Ohio	2,233
Oklahoma	89
Oregon	187
Pennsylvania	4,129
Rhode Island	148
South Carolina	172
South Dakota	58
Tennessee	623
Texas	920
Utah	122
Vermont	34
Virginia	403
Washington	312
West Virginia	86
Wisconsin	384
Wyoming	6
Total United States	**40,386**
Canada	1,053
Other Foreign (Including U. S. Possessions)	11,752
Total for World	**53,191**

It's DISTRIBUTION and CONTROL That Counts!

EVAPORATOR efficiency depends upon proper distribution of the refrigerant through the coils and upon proper, accurate control of the refrigerant. No evaporator can function properly or attain its maximum capacity unless these two factors are provided.

•

Alco engineers have made an exhaustive study of refrigerant distribution and control. In many instances tests in the Alco laboratories, and recommendations of Alco experts, have increased evaporator capacities from 25% to 100% over the maker's original rating.

•

The experience and knowledge of Alco engineers are available without charge or obligation.

•

Manufacturers are invited to send their evaporator units to Alco for confidential test and valve application. Contractors and service men are invited to write or phone their control problems to any Alco representative.

ALCO VALVE CO.
Incorporated
2628 Big Bend Boulevard St. Louis, Mo.

"Known Wherever Refrigerants Are Controlled"

Commercial Machine Sales of 15 Manufacturers Total 9,365 Units during October, 1936

The following report of commercial refrigerating and air-conditioning equipment sales for October, 1936, were made to the Commercial Refrigeration Section of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) by the following 15 companies:

Brunner Manufacturing Co., Carrier Engineering Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigeration Corp., Kelvinator Corp., Leonard Refrigerator Co., Merchant & Evans Co., Norge Corp., Servel, Inc., Uniflow Manufacturing Co., Universal Cooler Corp., Westinghouse Electric & Manufacturing Co., York Ice Machinery Corp.

	SALES FOR OCTOBER, 1936 Domestic Quantity	Domestic Value	Canadian Quantity	Canadian Value	Other Foreign Quantity	Other Foreign Value	Total World Quantity	Total World Value
1. Bottle Water Coolers—Complete	112	$ 9,543	1	$ 76	36	$..3,143	149	$ 12,762
2. Pressure Water Coolers—Complete	753	88,463	3	301	124	14,352	880	103,116
3. Water Coolers—Low Side Only	58	4,458	....	....	....	....	58	4,458
4. Ice Cream Cabinets—Complete	298	44,716	....	....	71	6,474	369	51,190
5. Ice Cream Holding Cab. Only (Remote)	226	27,694	1	129	3	364	230	28,187
6. Bottled Beverage Coolers—Complete	668	50,749	....	....	73	5,059	741	55,808
7. Milk Cooling Cabinets (No High Sides)	188	12,659	....	....	2	99	190	12,758
8. Air Conditioners—Self-Contained	25*	6,808*	....	....	31	7,867	6	1,059
9. Air Conditioners—Floor Type (No High Sides)	109	49,003	....	....	18	8,563	127	57,566
10. Air Conditioners—Ceiling (Cooling Only—No High Sides)	71	9,294	....	....	12	1,611	83	10,905
11. Air Conditioners—Ceiling Type (Equipped for Heating—No High Sides)	40	23,766	2	1,435	....	....	42	25,201
12. Air Conditioners—Residential Type (No High Sides, Boilers, or Furnaces)	5	258	....	....	....	....	5	258
13. Condensing Units Less Than ⅓ Hp.	960	49,370	6	452	848	53,109	1,814	102,931
14. Condensing Units—⅓ Hp.	1,188	84,656	16	1,387	383	31,803	1,587	117,846
15. Condensing Units—½ Hp.	1,172	110,285	12	1,272	260	27,045	1,444	138,602
16. Condensing Units—¾ Hp.	932	114,983	15	2,162	90	11,965	1,037	129,110
17. Condensing Units—1 Hp.	498	76,524	3	507	83	13,773	584	90,804
18. Condensing Units—1½ Hp.	247	49,084	2	399	42	8,193	291	57,676
19. Condensing Units—2 Hp.	86	19,146	1	235	77	20,837	164	40,218
20. Condensing Units—3 Hp.	68	19,368	....	....	31	6,997	99	26,365
21. Condensing Units—5 Hp.	42	20,089	....	....	11	4,385	53	24,474
22. Condensing Units—7½ Hp.	19	12,403	....	....	11	6,368	30	18,771
23. Condensing Units—10 Hp.	28	21,791	....	....	6	4,402	34	26,193
24. Condensing Units—15 Hp.	31	26,253	....	....	2	1,336	33	27,589
25. Condensing Units—20 Hp.	21	24,308	....	....	6	6,035	27	30,343
26. Condensing Units—25 Hp.	20	23,401	....	....	3	4,056	23	27,457
27. Total Lines 13 to 26 Inclusive	**5,312**	....	**55**	....	**1,853**	....	**7,220**	....
28. Total Lines 1, 2, 4, 6, 8, and 27	**7,118**	....	**59**	....	**2,188**	....	**9,365**	....
29. Commercial Evaporators (Not Reported Above)	3,021	75,348	83	2,589	1,003	27,513	4,107	105,450
30. Air-Conditioning Evaporators (Not Reported Above)	178	23,781	....	....	6	4,200	184	27,981
31. Total Commercial & Air Conditioning	....	**$1,064,585**	....	**$10,944**	....	**$279,549**	....	**$1,355,078**

*Includes sales and credits reported by more than one company.

Chicago Service Group Starts Expansion

(Concluded from Page 1, Column 4)

president of R. Cooper Jr., Inc., outlined the objectives of the group and invited all qualified companies to join in a movement to raise the standards of servicing in Chicago. He called attention to the continued improvements in quality which manufacturers have made in their products and urged service men to cooperate by educating themselves to meet the needs which have come with the rapid growth of the industry.

Gerald Gearon, head of the city boiler inspection department, informed the assembly that his files show that a large portion of the accidents involving refrigeration are due to poor service. He referred to the ordinance now in effect in Detroit which requires service companies to obtain a license and expressed the hope that a similar ordinance would be passed by the Chicago Board of Alderman.

A. T. Stock of Perfection Parts Co. told about some of the problems encountered in supplying parts for orphan makes of machines and suggested that the association find some way of determining who should be entitled to obtain parts and make repairs to refrigerators.

H. V. Higley, of Ansul Chemical Co., Marinette, Wis., enlivened the meeting with some stories of servicing in the early days of electric refrigeration. His first job in the industry was with the old Isko Co. in Detroit where he held the title of chief chemist.

John Dunville of Refrigeration and Air Conditioning Institute, Chicago, explained the work being done by the school in training new men to supply the demand of the industry.

S. Cortland of the Chicago Title & Trust Co., which operates many apartment buildings, stated that their big problem is the selection of qualified firms and men to handle maintenance. He welcomed the advent of a organization which will vouch for the competency of its members.

F. M. Cockrell, publisher of AIR CONDITIONING AND REFRIGERATION NEWS, reviewed the growth of independent service companies during the past few years and discussed the advantages of cooperative organizations in industry.

The Refrigeration Service Association of Chicago has its headquarters at 365 E. Illinois St. L. C. Kohlman is president and A. G. Weil is secretary.

Airtemp Distributors See 1936 Conditioners

(Concluded from Page 1, Column 5)

topics to be covered during the convention, and briefly outlined the company's plans for the year.

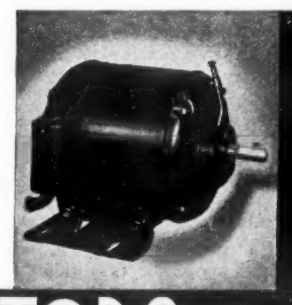
Airtemp officials who were speakers at the convention sessions included: H. B. Orr, J. C. Chambers, merchandise manager, Roy M. Miller, sales promotion and advertising manager, and E. W. Garbisch, vice president of J. Stirling Getchell, advertising counsel for Airtemp, Inc. H. C. Jamerson was master of ceremonies.

Col. A. C. Downey, president of Airtemp, Inc., was banquet speaker.

September State Sales of Nema Companies

States and Territories	Quantity of Household Low Sides
Alabama	730
Arizona	117
Arkansas	271
California	4,995
Colorado	602
Connecticut	734
Delaware	17
Dist. of Columbia	1,005
Florida	3,224
Georgia	532
Idaho	210
Illinois	2,980
Indiana	1,426
Iowa	481
Kansas	718
Kentucky	234
Louisiana	1,042
Maine	65
Maryland	825
Massachusetts	3,261
Michigan	3,373
Minnesota	553
Mississippi	264
Missouri	2,066
Montana	237
Nebraska	160
Nevada	166
New Hampshire	243
New Jersey	4,289
New Mexico	123
New York	15,927
North Carolina	505
North Dakota	54
Ohio	4,872
Oklahoma	573
Oregon	455
Pennsylvania	8,015
Rhode Island	351
South Carolina	237
South Dakota	56
Tennessee	1,163
Texas	2,622
Utah	364
Vermont	67
Virginia	1,096
Washington	975
West Virginia	176
Wisconsin	595
Wyoming	46
Total United States	**72,846**
Canada	1,034
Other Foreign (Including U. S. Possessions)	9,835
Total for World	**83,715**

HERE'S WHY WAGNER MOTORS ARE QUIET

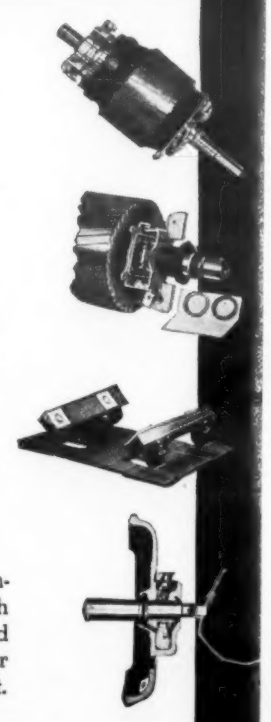


1 • **Rotor** is dynamically balanced to eliminate vibration and noise arising therefrom. The number and the dimensions of rotor slots are carefully chosen to minimize magnetic noise.

2 • **Cork Thrust Washers** located at both ends of the motor cushion the free-end movement of the rotor thereby preventing noise.

3 • **Resilient Mounting,** interposed between motor frame and base, is made up of layers of rubber and steel vulcanized together — is elastic enough to absorb the small amount of vibration remaining in the most carefully-designed motor.

4 • **Steel-backed Babbitt-lined Bearings** are diamond-bored to secure bearing clearances small enough to avoid any possibility of excessive play and at the same time have ample clearance to afford a liberal oil film between shaft and bearing.



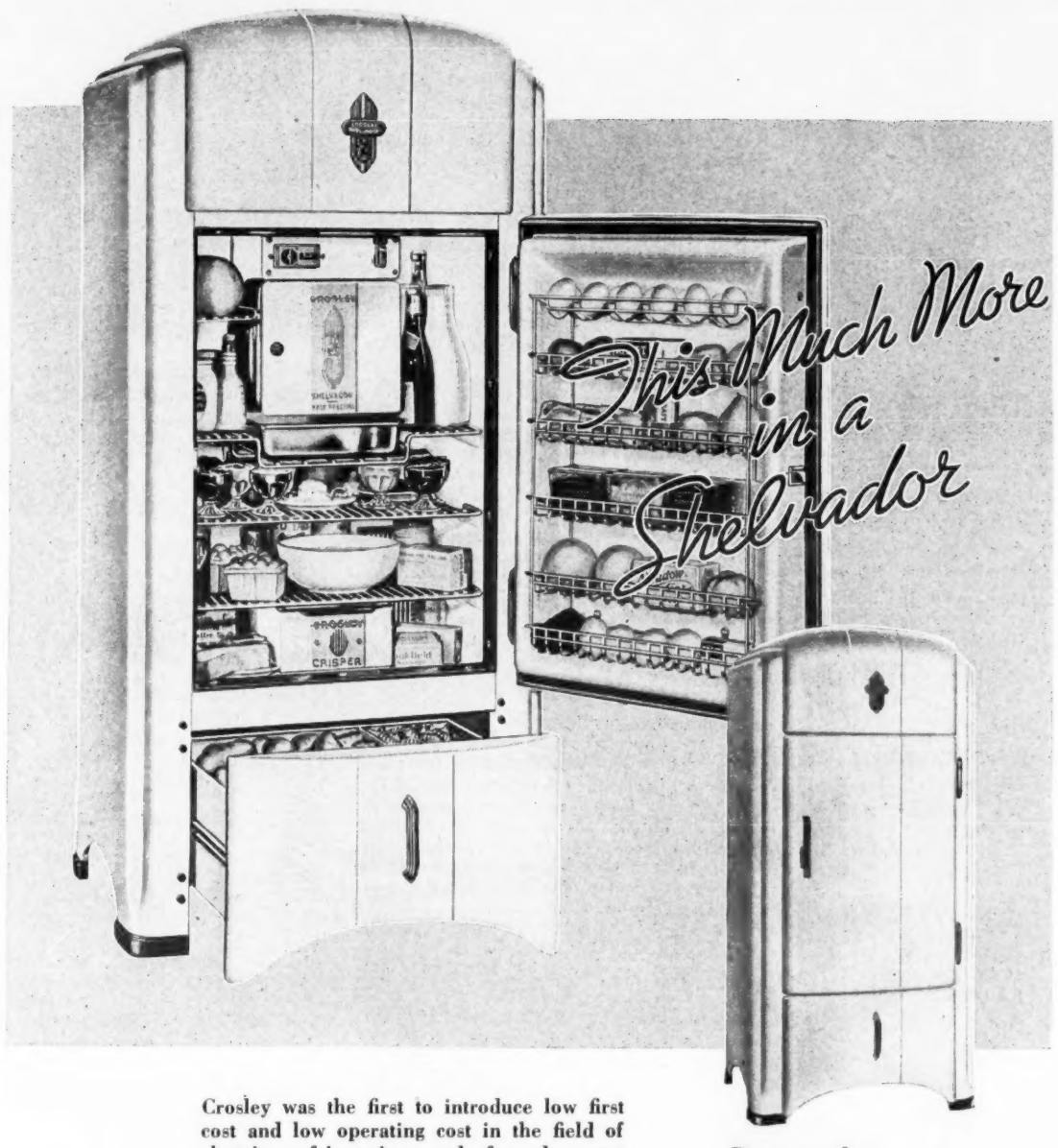
There are many other features of Wagner small motors, contributing not only toward quiet operation, but toward such essentials as dependability, performance, simplicity, and appearance. These features are fully described in Wagner Small Motor Bulletin 177, which will be sent upon request.

MS336-2J

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, U.S.A.

MOTORS TRANSFORMERS FANS BRAKES

THE MAGIC WORDS



The Internationally famous words,

"This much more in a Shelvador"

have been the magic words—the open sesame—to large profits to distributors and dealers in over 120 countries and colonies throughout the world. Its story is told at a glance, and too, Crosley Shelvador is The World's Most Beautiful Electric Refrigerator. Only the Shelvador offers this extra usable space, and such an array of amazing conveniences. No wonder Shelvador enjoys such world wide acceptance.

Crosley was the first to introduce low first cost and low operating cost in the field of electric refrigeration and for the past fifteen years Crosley pioneering leadership has brought untold satisfaction to thousands upon thousands.

Synonymous with the highest possible quality at the lowest possible price, Crosley products have been recognized for many years as the outstanding values in their respective fields.

Remember - - -
ONLY CROSLEY
has the
SHELVADOR

CROSLEY COOLREST

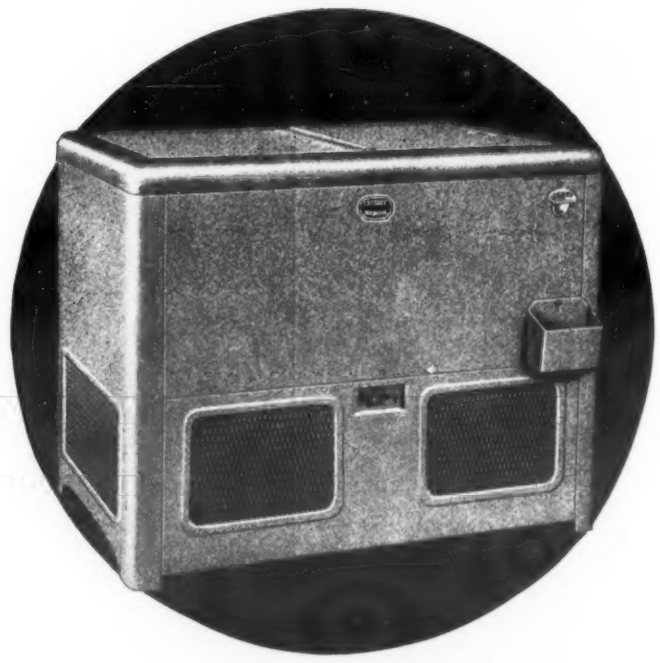
for cool refreshing sleep on hot sultry nights

Air conditioning where it is needed and at a price that almost anyone can afford. Crosley Coolrest not only cools but also removes excess moisture from the atmosphere, and purifies and recirculates the air under the canopy.

15 .8-50-175 — 15" Speaker — 540-18,000mKc.
15 Tubes — 175-556 Meters — 25 Watts Output

Radio-phonograph combination with automatic record changer for Alternating Current Only

Auto-Expressionator . . . Mystic Hand . . . Bass and Treble Tone Compensation . . . Six-Step Fidelity Control . . . High Fidelity . . . Metal Tubes . . . Cardiamatic Unit . . . Magna-Ceramic Dial . . . Curvilinear Speaker . . . Neon Tuning Tube . . . Push-Pull Triple-Twin Output . . . Broad Automatic volume control . . . Power supply noise filter. Dimensions: 35⅛" high, 42½" wide, 20" deep.



The New CROSLEY KOLDRINK

Electric Bottle Cooler

Ideal for keeping bottled drinks chilled to the right temperature. This valuable necessity of wide utility costs less to operate than non-electric methods, and it's completely automatic. The low first cost is typical of Crosley products—and the high quality makes Koldrink the biggest value ever offered in a cooler.

THE CROSLEY RADIO CORPORATION

Home of "the Nation's Station" - - WLW - - 500,000 watts - - most powerful in the world - - 70 on your dial

POWELL CROSLEY Jr. ***President*** ***Foreign Division*** ***Cincinnati, Ohio, U. S. A.***

Around the World

With George F. Taubeneck

Black-shirted Italy, with its black-eyed maidens and its flashily dressed soldiers, was in the midst of rejoicing over the beginnings of a new Roman Empire on the Mediterranean when Editor Taubeneck arrived there on his world tour. The country was gay and festive; little girls were playing with Ethiopian dolls; little boys were playing with military toys; the citizenry gathered around huge relief maps of Abyssinia, speculating on their chances of making a new living in the Italy Across the Sea. Huge posters of shapely, nude black girls drew plenty of attention, too.

Money was being spent freely; but as was reported in these columns last week, American refrigeration firms get practically none of it. Stymied by empty offices everywhere but in Milan, the editor walked through the ruins of the Roman Forum, the Catacombs, and other crumbling remains, saw the splendors of the Vatican, gondolaed through Venice, swam at the Lido, and picked up snatches of information about Mussolini's Italy.

This is the 49th consecutive instalment of the editor's "World Series," based on the seven months' trip around the world he took this year.

Schraemli & Foster

When the wave of nationalism which engulfed Italy under Mussolini swept the refrigeration importing business out of the country, a couple of Milan bankers by the names of Schraemli and Foster negotiated for the rights to manufacture Frigidaire products in Italy.

Two years ago Frigidaire withdrew entirely from the field, and Schraemli & Foster took over the business.

In their Milan plant they now manufacture Frigidaire household and commercial refrigerators, and from all reports, do a nice business.

This was one firm the writer failed to crack. Couldn't get past the non-English-speaking man at the front door, nor could I find anyone to arrange an introduction for me.

Through the Milan showroom window, however, I got glimpses of machines which seemed exceedingly well made. Fact is, the commercial compressors were neater in appearance than any I have seen in the United States.

According to reports, Schraemli & Foster is manufacturing according to its own designs, rather than those of Frigidaire, at present.

* * *

Westinghouse with a Dash of Perfume

Electrodamus S/A, a company which is primarily in the perfume business, distributes Westinghouse refrigerators in Italy.

Soon, I was told, Westinghouse hermetically sealed compressors will be manufactured in the great FIAT motor car plant at Turin. This factory had just begun turning out the sealed units when the Ethiopian war came along, and production had to be abandoned in favor of the manufacture of military supplies.

By this time, production should have been resumed.

At the time of my visit to Milan, there wasn't a Westinghouse appliance for sale anywhere—all sold out, and no import permits on hand.

Biggest Westinghouse merchandiser in Italy is C. Bosio of Milan, who has branches at Rome, Turin, Varese (a small town which does a big Westinghouse business), Busto-Arsizio, Biella, Bolzano, and Novara.

According to A. Tamai, who represents Westinghouse International in Italy, exports of refrigeration products to Italian Tripoli have been highly gratifying in the last couple of years. The dealer down there is known by a long set of initials: S. A. F. E. I. T.

Water in Tripoli is both warm and expensive, which is said to be one reason why air conditioning hasn't made any strides down there.

* * *

Other Appliances

No washing machines are sold in Italy, and few vacuum cleaners. Electric range business is pretty good. Power companies act as dealers, selling to the public on very small instalments collected with the lighting bills. This procedure has been tried in a small way with refrigerators, too.

Electric rates are expensive in Milan—one kilowatt hour costing the equivalent of seven cents. Up in the northern provinces electric rates actually get down below one cent per kilowatt hour. On the other hand, in Sicily they run from 21 cents to 35 cents per kwh.

Three or four private power trusts, which submit to a measure of state supervision, have the electrical generating and distribution business under control. These trusts act as holding companies for individual operating units.

* * *

Artificial Wool

Italian people, consumed at the present with an eagerness to step up their industrial works, have recently turned their hands to solving the age-old problem of increasing wool production by some new methods, and it seems that they have "got something" in Lanital, a protein product from which fine wools can be made.

Now being manufactured at great pace in Italy, this substance was evolved by Commendatore Antonio Ferretti. It is being manufactured at the rate of 5,000 kilos a day, at the Snia Viscosa mill at Cesano Maderno.

Made of the milk residue derived during the manufacture of milk and cheese, Lanital, which is a casein product, has many characteristics in common with the finest of wools, they tell us. Since wool has ever been obtainably only after years of patient sheep breeding, and since there is no where's near enough of the natural wool to supply the present market, Lanital will mean for Italy a new field, one that should be very lucrative.

Samples of Lanital were shown recently at the Milan fair. They have had the approval and endorsement of countless scientists and commercial executives. Claims for the new product are that its chemical composition is essentially the same as that of genuine sheep's wool.

Professor Menozzi has worked out a comparison of the two products, and obtained the following results:

	Lanital Per Cent	Natural Wool Per Cent
Carbon	53.00	49.25
Oxygen	23.00	23.66
Nitrogen	15.50	15.86
Hydrogen ...	7.00	7.57
Sulphur	0.70	3.66

The manufacturers of Lanital claim that it has the following characteristics: fineness of fibre, immunity to moths, elasticity and resistance, and durability.

They claim also, that it can be easily spun, and that its processing does not require any new types of equipment or machinery. And—those engaged in the knitting vogue that has swept America, will be glad to know, Lanital is extremely soft and doesn't itch! Its cold resisting properties are also said to be comparable to the real McCoy.

* * *

Textiles & Manufacturing

There are about 1200 factories in Italy devoted to the different phases of the cotton industry — spinning, twisting, weaving, bleaching, dyeing, printing and finishing. Seventy percent of the workers are women. Four fifths of its raw material is imported from America. Cotton leads all other exports.

Ten million sheep from the Alpine slopes give up no more than a quarter of the wool needed by the industry. Since the war factories have so grown that manufactured woolen goods in Italy are in the main home-made, and here again exports far exceed imports.

The rayon industry in Italy also was a war baby. In 1929 31% of the world's production came from there. China, India and the United States remain its best markets.

Though hampered by lack of raw materials, the modern glass industry in Italy has won a name for excellent craftmanship. Besides artistic creations, its factories produce domestic, commercial, and scientific glassware. The art of ceramics, made famous in Italy in the eighteenth century, likewise depends largely on foreign countries for raw materials.

Italy has 800 tanneries contributing to 55,000 daily pairs of boots and shoes. Naples is center of the glove-making industry, exporting four pairs out of every five. Piedmont, Lombardy and Liguria monopolise the knitted goods industry, splitting 90% between them. Buttons, ribbons and hose are still big business in the Po valley. Matches and celluloid spread Italian sulphur at home and abroad.

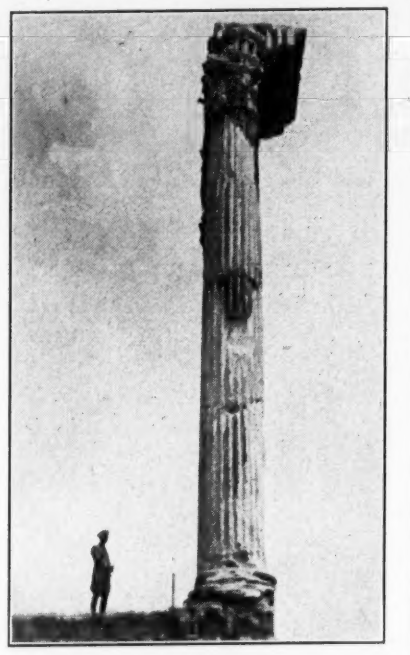
Furniture making is an old Italian craft which is still engaged in by individual craftsmen. It has been taken up on a commercial scale, however, especially in wickerwork.

Industries such as cheese-making, canning, vinegar-making, coffee substitutes, and certain types of wine, have originated as off-shoots of agriculture.

Fairs and markets are held not only in every town but in almost every Italian village as well. They are held throughout the year. The Samples Fair at Milan, held in mid-April, is now the third greatest in Europe.

* * *

Relics and Visions



Rome—Yesterday and Tomorrow. Spending his days in the shadow of relics of Rome's past grandeur, the Italian soldier dreams of the new empire which he hopes—and expects—to help build.

Cinematograph

The cinematograph film industry began in Italy in 1916, and before the war Italian motion-pictures enjoyed world-wide recognition. Then the industry was allowed to decline. Recently an effort to revive the business was begun, and it is being completely reorganized.

At present there are two Italian film producing companies, the "Cines" and the "Caesar," with six studios. English, American, and lately French films, have become increasingly popular.

There is also the national "L.U.C.E." devoted to the production of scientific and educational propaganda.

* * *

Transportation

Italian railroads have been kept up-to-date and are now on a par with the best European lines. There are railway passages cutting the Alps, plugging Italy into the continent. Long tunnels have been constructed through some of the mountains, the Simplon tunnel being the longest in Europe. Its length is 20 kilometers—12½ miles.

Many of the lines, especially those which pass through the tunnels of the Alps, are equipped for electric locomotives. Speeds over a mile a minute are part of the schedule. Direct routes run to all the capital cities in Europe, and one can travel from Italy to Paris or Berlin without changing trains. The ancient Roman roads have been transformed into modern highways. For rapid travel between important centers of the country there are the "autostrade" reserved for motorists who wish to travel at high speed. A small fee is charged to each driver who takes advantage of this service. Public motor service provide fast, comfortable service for reasonable fares.

Italy's principal ports are Genoa, Naples, Palermo, Trieste, Fiume and Venice. The pride of her ocean fleet are the liners *Rex* and *Conte di Savoia*, each of about 50,000 tons displacement. Air liners from Rome take off to all parts of Europe, and International airways from England drone high overhead to Egypt and India.

* * *

Wireless

As every schoolchild knows, Italy's Signor Guglielmo Marconi invented the wireless—known to us as the radio.

The first broadcast in Italy took place in Rome in 1924. By Royal decree, dated Dec. 14 of that year, the monopoly of wireless broadcasting in Italy was granted to the Italian Radiphone Union, conditional on the installation of wireless stations at Milan, Naples and Palermo.

In the following year the station at Milan started broadcasting. The original station in Rome was made more powerful in 1926. In November of the same year the Naples station was completed and put into operation. Other small stations were established throughout the country—in Turin, Genoa, Bolzano, Trieste and Florence, and finally a short-wave station in Rome itself.

Italy has taken active part in the International Broadcasting Union instituted at Geneva, Switzerland, for the purpose of regulating the coexistent services of the different stations.

Overseas broadcasts are not uncommon, and occasionally a program is transmitted to the United States. One notable example of the latter was the broadcast of Mussolini's call to arms prior to the Ethiopian campaign, in which Americans sitting at home heard the dictator stir his public into a frenzy of patriotism in one of those mass meetings in the public squares of Rome.

* * *

Foreign Exchange

Strict control of foreign exchange dealings really began May 26, 1934, although authority to impose restrictions by administrative act, in the form of decrees issued by the Finance Minister, was given by a decree-law published Sept. 29, 1931, or shortly after Great Britain abandoned the gold standard. That authority was not, however, used until May, 1934, when it was invoked because of the increasingly adverse trade balance and of drains on the gold reserves of the Bank of Italy.

Banks and other business concerns having accounts in foreign currency, established either in Italy or abroad, were required to declare them within specified periods. Italian banks and citizens domiciled in Italy were forbidden to acquire securities on foreign markets or negotiable instruments issued abroad. In addition, it was forbidden to export banknotes, drafts, checks, and lira securities.

The negotiation of lira credits and the discounting of lira bills, in the course of dealings with foreign countries, was made subject to prior authorization of the Finance Minister.

The restrictive measures of May, 1934, did not apply to foreign exchange issued in connection with import transactions. The latter were placed under close control in the last half of 1934, with the laying-down of the requirement that import shipments must be cleared through the customs and shipping documents certified by customs officials before exchange would be made available. Until 1935, however, there was little or no delay in securing exchange to settle legitimate commercial transactions.

* * *

Moses

Michelangelo's famous statue of Moses—one of Rome's art treasures—snapped indoors with the Contax.

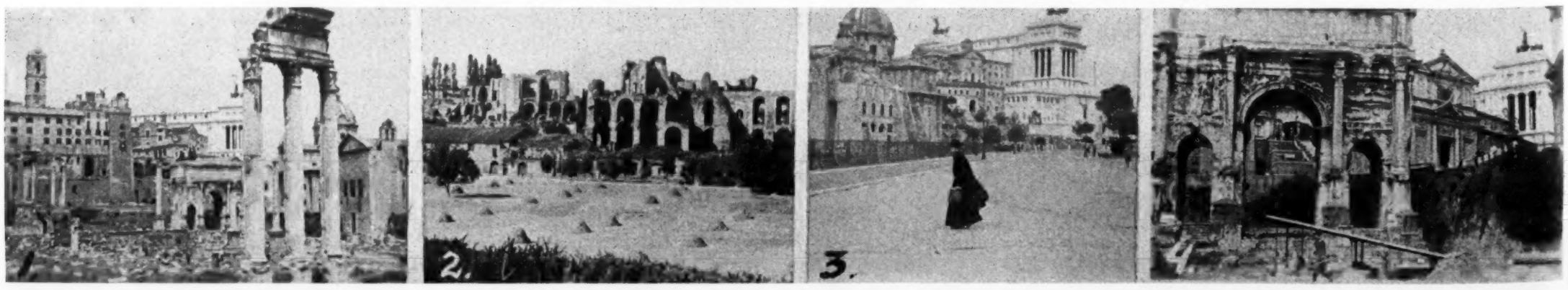
Rome

Rome, looping over the famous seven hills, is like the magnificent dream of an empire builder—stopped at the moment before his awakening. It has embodied in its history much that our civilization has considered great, dim in the remnants of the past.

From the legendary story of its founding by Romulus in 753 B. C. on through the present, Rome has prob-

(*Concluded on Page 8, Column 1*)

Many Vestiges of Past Linger in Great Modern City of Rome



1. Rubbish and ruins, the remains of the Roman Forum are a sad and bedraggled spectacle. 2. The notorious Rape of the Sabine Women took place on this wheatfield. 3. Rome seems largely priests and monuments. 4. Three distinct periods of Roman architecture—classic, medieval, and modern, reading from left to right—are visible in this snapshot.

Lightfoot-Ellarcold Has Wide Line in Commercial Field

LONDON, England—Lightfoot Refrigeration Co. Ltd., associated for over half a century with the development of mechanical refrigeration units, now manufactures all types of refrigerating and ice-making machinery and equipment.

Lightfoot and Lightfoot-Ellarcold refrigerating machines and cabinets are available for nearly every purpose, and range from actual ice-making equipment to small refrigerated display cabinets. Lightfoot-Westinghouse commercial units, with cabinet by Lightfoot and refrigerating unit by Westinghouse Electric & Mfg. Co., are also available in a variety of models.

Lightfoot compressors are of the open type, either vertical or horizontal. All working parts are easily accessible for cleaning or adjustment, and the units are mounted on baseplates.

Lightfoot condensers may be had in a variety of types, namely: normal open type, surface evaporative type, submerged type, double-tube type, and Lightfoot patented flooded type. In cases where water supply for condensing purposes is scarce or expensive, the company recommends the surface evaporative type, as the quantity of water required is only a fraction of that required with the other types.

Lightfoot also produces cold-storage and meat-freezing equipment operating under the brine system, direct-expansion system, or air-circulation system.

A small cold-storage plant is also manufactured for use by butchers, hotels, private residences, etc. This unit has been specially constructed so that it may be operated by an unskilled attendant with no previous knowledge of refrigerating machinery.

Marine types of refrigerating machines are also produced by this concern, which are applicable not only for preservation of passengers' provisions and perishable cargoes, but can also be applied simultaneously to the manufacture of ice.

Special machines have been designed by this company for use in tropical countries, where the efficiency of ordinary refrigerating machinery is impaired by climatic conditions.

Lightfoot Refrigeration Co. lists among the users of its equipment, the following governments: French, Russian, Italian, Japanese, United States, Argentine, Chilian, Peruvian, Brazilian, Spanish, and various agencies and colonies of the British Empire.

Included in the Lightfoot-Ellarcold line are various types of refrigerating machines, cold rooms, commercial cabinets, refrigerated windows and counter displays, unit coolers, ice cream freezers and storage cabinets, and milk-cooling plants.

The Lightfoot-Ellarcold unit cooler, for cooling beer and wine cellars, restaurants, kitchens, fruit storage rooms, and other places where the desired temperature is 45° F. or above, may be used as either ceiling or wall fixtures. No air ducts are required.

Machine units for these installations may be had in either water or air-cooled types, all having welded liquid receivers, vertical, twin-cylinder compressors, automatic controls, and patented thermostatic regulators. All these units employ methyl chloride as refrigerant.

Head office and show rooms of Lightfoot Refrigeration Co., Ltd., are in Bush House, London, W.C.2.

Locations of the company's branch offices follow: Ellarcold Works, 1 Cheapside, Birmingham, 5; 15 Bridge St., Bristol; 251 N. Circular Road, Dublin; 23 Hill St., Edinburgh; Central Station, Queen St., Exeter; 48 W. Regent St., Glasgow, C.3; 31 & 36 Cabinet Chambers, Basinghall St., Leeds, 1; 505 & 507 Corn Exchange Buildings, Manchester; 12B Saville Row, Newcaster-upon-Tyne.

The company also has resident service engineers and depots located throughout Great Britain and the Irish Free State.

Nelson Takes Post with British Distributor

CINCINNATI—Roy J. Nelson, for the past three years connected with the export department of Crosley Radio Corp., sailed on the *Queen Mary* from New York Nov. 18 to become refrigeration supervisor for A. J. Balcome, Ltd., London, England, distributor for Crosley electric refrigerators in Great Britain.

In addition to his work with Crosley, Mr. Nelson has had a number of years experience in the refrigeration export business, including traveling in a number of South American countries. He will be in charge of the assembly of small household refrigerators and of commercial and air-conditioning installations for the British firm.

Appliance Sales Up 20% in Mexico for 1935 Over 1934

MEXICO CITY, Mexico—Estimates based upon dealers' statements indicate that sales of electrical appliances in Mexico were approximately 20% greater in 1935 than in 1934, according to U. S. Consul George H. Winters.

Among the factors contributing to this increase were: general business improvement; reduction of electric current rate; a 7% increase in the number of those using electricity; rapidly increasing sales of small, inexpensive articles made in Japan and Mexico; more intensive sales methods; and educational campaigns carried on by dealers and power companies.

Electric refrigerator sales in 1935 were estimated at $25,000 U. S. currency, Mr. Winters reports, five of the best-known makes being available in this market.

Sales of radios increased more in proportion during 1935 than did the average of all appliance sales, practically all leading makes being sold. Of an estimated radio sales total of $46,500 for 1935, approximately $45,000 represents sales of American sets.

American-made electrical appliances as a whole enjoy a favorable reputation in this locality, says Mr. Winters, and, in spite of lower prices offered on many foreign and domestic appliances, compete successfully.

Approximately three-fifths of the total appliance sales in this consular district, Mr. Winters reports, were American; of imported appliances sold here last year, about seven-eighths were from the United States.

Owing to peculiar local conditions, some appliances such as washing machines, vacuum cleaners, and water heaters, have practically no sale in the Guaddalajara district. With the exception of these items, however, Mr. Winters maintains that most of the appliances commonly used in the United States also find some demand here.

Government Builds Ten Cold Storage Houses in India

CALCUTTA, India—The Defence Department of the Indian government has completed arrangements for the erection throughout northern India of a system of cold storage units, the work to be done by private firms.

Ten such storage houses will be constructed west of the Indus river, the more important to be at Quetta, Peshawar, Kohat, Nowshera, Razmak, and Bannu. East of the Indus, installations will be made at Rawalpindi, Sialkut, Firozepur, Jullunder, and Amritsar.

Capacity of these storage houses will vary considerably, ranging up to 400 tons. Although they are to be principally for military use, a large amount of space will nevertheless be available for civilian use.

In addition to these warehouses, proposals are also being invited by the Defence Department for refrigerated rail and road transport facilities, reports U. S. Trade Commissioner George C. Howard.

National Safe Deposit & Cold Storage Ltd. is active in a similar but independent scheme. It is inviting subscriptions to an issue of 2,500,000 rupees for erecting cold storage warehouses and safe deposit vaults in Delhi, Lahore, and Cawnpore.

Kelvinator's London Cabinet Shop

In this modern assembly plant, Kelvinator, Ltd., takes care of cabinet work for its extensive trade in the United Kingdom. Shown above is a section of the shop with ice cream cabinets and household units on the assembly lines.

THE HALLMARK OF QUALITY IN ANY REFRIGERATION SYSTEM!

Kerotest Leadership is Backed by 27 Years of Progressive Experience Plus the Highest Quality Standard . . . Plus the Confidence of Leading Manufacturers of Equipment Throughout the Refrigeration World . . . . .

Kerotest is to refrigeration valves and fittings what sterling is to silverware—a mark of the highest merit—based on improved design the best materials and meticulous craftsmanship. Back of this sound, long established organization is more than a quarter century experience in the manufacture of high pressure valves. These valves are made for tubing as small as 3/16 inches to pipe as large as 20 inches.

As a pioneer manufacturer of forged brass refrigeration valves and fittings, Kerotest made the first commercial shipment in 1924 when the refrigeration industry was in its infancy. Kerotest began making valves better than they were ever made before and have steadfastly continued this high standard down through the years.

Today the Kerotest line is broad and comprehensive including Valves, Fittings and Accessories for every refrigerating requirement. They are acceptable as standard by the largest manufacturers of refrigerating equipment in the world—built to the highest service standard—never to a price.

Result, a world-wide demand for genuine Kerotests and the confidence of foresighted refrigeration engineers and executives everywhere. No matter which of the seven corners of the world you are located, you can specify Kerotest with the utmost confidence. Write or wire your nearest Kerotest Representative for detailed information.

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PA.

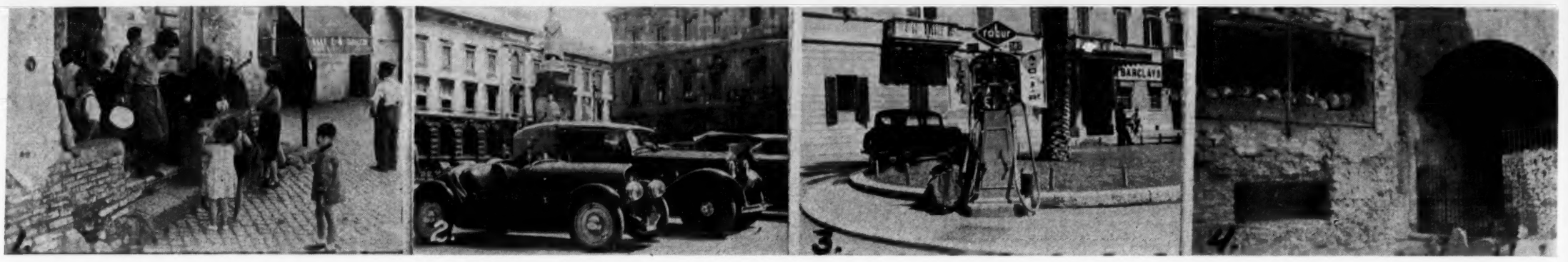
GENERAL EXPORT REPRESENTATIVES
Melchior, Armstrong, Dessau Co., Inc.
300 Fourth Avenue - - - - - - New York City, N.Y., U.S.A.

TERRITORIAL REPRESENTATIVES
Honolulu, T.H. - - - - - - - - Theo. H. Davies & Co., Ltd.
San Juan, Puerto Rico - - - - - - - Refrigeration Supply Co.

AUSTRALIA REPRESENTATIVES
F. C. Lovelock, Ltd.
235 Clarence Street - - - - - Sydney, Australia

CANADA REPRESENTATIVES
Montreal, Toronto and Winnipeg - Railway & Engineering Specialists, Ltd.
Vancouver - - - - - - - - - - - Fleck Bros., Ltd.

Happy Italians Go in for Song, Fast Cars - - and Age-Old Catacombs



1. Funloving and musical, the Italians are a happy race. 2. They go in for fast cars in Italy, and here is how they appear. 3. Gas stations in Rome are simplicity itself. 4. This snapshot, taken inside the labyrinth of the Roman catacombs, reveals a row of skulls of early Christians in the upper left corner.

Around the World

With George F. Taubeneck

Articles of Editor George F. Taubeneck's "Around the World" series appeared in the following issues of the NEWS:

Jan. 8, 1936—Detroit, Mich.; Jan. 15—Jackson, Mich., and Chicago, Ill.; Jan. 22—St. Louis, Mo.; Jan. 29—Claremore and Tulsa, Okla.

Feb. 5—Dallas, Tex.; Feb. 12—El Paso, Tex., and Juarez, Mexico; Feb. 19—Yuma, Globe, and Phoenix, Ariz.; Feb. 26—San Diego, Calif. (also California Pacific Exposition).

March 4—Los Angeles and Hollywood, Calif.; March 11 and 18—San Francisco, Calif.; March 25, April 1 and 8—Honolulu, Hawaii.

April 15—Pago Pago, Samoa, and Suva, Fiji Islands; April 22 and 29—Auckland, New Zealand.

May 6—Melbourne, Australia; May 13 and 20—Sydney, Australia; May 27—Brisbane and Townsville, Australia.

June 3—Shipboard (Sydney to Singapore), and Darwin, North Australia; June 10—Papua and New Guinea, and Soerabaya, Java; June 17—Bandoeng, Batavia, Semarang, Soerabaya, Solo, and Djocja, Java; June 24 and July 1—Singapore, Straits Settlements.

July 8—Penang, Straits Settlements, and Rangoon, Burma; July 15—Calcutta, India; July 22 and 29—Benares, Agra, Delhi, and Bombay, India.

Aug. 5—Suez Canal; Aden, Arabia; and Cairo, Egypt; Aug. 19 and 26—Tel-Aviv, Haifa, Jerusalem, and Jaffa, Palestine.

Sept. 9—Complete text of paper delivered at Seventh International Congress of Refrigeration, The Hague, Holland; Sept. 16 and 23—Colon and Barcelona, Spain, and Marseilles, France; Sept. 30—Malta.

Oct. 7, 14, 21, 28, and Nov. 4—Paris, France (including study of French quota system and survey of the French market).

Nov. 11, 18, and 25—Monte Carlo and Italy.

(*Concluded from Page 6, Column 5*)

ably the most interesting history of any city in the world.

First a sheepfold, then a town, later a walled city that became a little nation. Under imperial hands a kingdom, then a republic and finally an empire.

Flourishing as a small town in the sixth century B. C., under the rule of the Tarquinian family, Rome next became a republic following the expulsion of the kings in 509 B. C. Principal work of the republic consisted in establishing supremacy over Sicily and Greece, and then spreading over cities surrounding the Mediterranean.

As capital of the world, the city began to preen its feathers and build fitting monuments to its power. Highways were laid, impressive buildings rose, walls, and public works dotted the centers of Rome's busy streets.

But the greatness of Rome, achieved during the reign of Augustus and succeeding emperors, was doomed to destruction during the Middle Ages. Sacked and burned countless times, the city repeatedly rose again. Under the influence of the early popes, efforts were turned towards restoring the monuments of antiquity and raising new grandeur.

Topping the list of famous spots in Rome are the ruins of the Colosseum where gladiatorial combats, persecutions of the Christians, bull fights were held. Started under the emperor Vespasian, the Colosseum was inaugurated in A. D. 80, following his conquest of Jerusalem. The notable aspect about this building is its size. It covers about six acres of ground, and has an external circumference one-third of a mile around. Height of its wall is over 150 feet.

* * *

Basilica of St. Peters

The one thing that the tourist visiting Rome doesn't dare miss—indeed, couldn't possibly miss,—is the Basilica of St. Peters. For one reason, it's one of the seven wonders of the world. For another, it's the store house of so many treasures that 20 kings' ransoms couldn't buy what it has.

Because history has always been one of the our long suits, we found out as much about this pillar of history as we could. To begin with, the present Basilica was 176 years being built, had the touch of 40 popes' directing hands, and cost at its completion a total of 45 million dollars—in the American exchange definition. That in itself makes St. Peters.

Built in the site of the circus of Nero, the basilica, ironically, crowns the spot where untold numbers of the early Christians were martyred. St. Peter—first pope—according to the story was executed right in the middle of Nero's one-ring circus.

To mark the spot where Peter was buried, Anacletus, reigning bishop in 90 A. D., build a small oratory over St. Peter's grave. Later, Constantine the Great built the first basilica. This new edifice lasted for eleven hundred years. In the middle of the 15th century, when it began to come out at the seams, Nicholas V. conceived the idea of building a new, more expansive and impressive church.

From this beginning the historical account of the building of the basilica sounds like a game. Each successive pope after Nicholas V. had a little different idea as to how the thing should be built. And each brought to the job a new set of masters, architects, and artists whose names ranked the top of the contemporary list.

Among these masters who took a hand at the designing and building of the church were Guiliano Da Sangallo, Da Verona, Raphael, Da Sangallo, Peruzzi, and finally Michelangelo, who was 72 years old when he worked on this gigantic commission.

What first arrests your attention when you see St. Peter's is the dome, accredited to Michelangelo. All in all, from the cross at the top to the building level, the dome is 435 feet high. A bronze ball on top of the dome is eight feet in diameter, and can hold 16 people without too much crowding—it's no place to start pushing, anyway.

The grammar school tale of Dick Whittington who believed London's streets to be paved with gold finds actuality inside the basilica. Everywhere the eye turns there's gold, rich marbles, intricate carvings, finely chiseled statuary, masterpiece paintings.

You really need a couple of months to take in all of St. Peters. And if you follow a guide, you find your brain rattling with famous names, famous works, famous dates. Even the stupendous floor inlaid with rare marble is covering for the tombs of popes—they're all famous, too.

A bird's eye survey of the Basilica reveals that there are 45 altars, 390 statues in marble, bronze, and stucco, and 748 columns in stone, alabaster, and bronze. Each is a minor masterpiece in intricacy.

The wide scope of art covered in the Basilica includes marble reliefs and friezes, the statuary of tombs, and carved altars and doors. Among its masterpieces are "The Retreat of Attila" (a marble relief said to have been done by Algardi in 1650), Michelangelo's "Pieta," G. Reni's "Archangel Michael," a baptismal font consisting of the cover of the porphyry sarcophagus of Otho II—these are but a few of the cathedral's treasures.

* * *

Roman Forum

Between the Capitoline and Palatine hills stretches what is left of the Roman Forum. Credited with having been first the scene of the battle between the Romans and the Sabines after the wholesale abduction of the Sabine women, it later become the focal point of the entire life of the community.

The mighty senate of the days of Cicero assembled here, and in it stood the rostras from which speeches that have resounded the world over rang with such fire and intensity.

Gradually during the time that Rome was a Republic, and later when it became an empire, the Forum was built up—great monuments, basilicas, arches commemorating leader's triumphs, bronze tablets and friezes, and costly marbles turned this Roman gathering place into a resplendent thing.

It remained thus until after the sixth century when a siege of vandalism bore away whole columns of marble, parts of arches, stones from its buildings, for use in Churches, palaces, and homes.

So intensive was this raid on the Forum that now only fragments remain. Eight columns of the temple of Saturn, some ruins of the temple of Romulus, part of the arch of Severus—the Roman Forum inspires the imagination to conjure up the splendor that once was, and people it with grand old Romans.

* * *

Vatican Palace

The Vatican Palace, which every respectable visitor to Rome peeks at, is really a whole group of buildings constructed at different periods, housing world famous paintings, books, and architectural and sculptured masterpieces.

Among the great architects and artists who contributed to designing and building the monumental apartments that compose the Vatican group were Raphael, Michelangelo, Brammante, Maderno, and Bernini.

Erected in 1473 by Giovanni De' Dolci at the request of Sixtus IV, the Sistine Chapel in the Vatican, itself as large as a church, is among the most famous of the world's showplaces. Ceiling and altar wall of the chapel were decorated by Michelangelo.

The Last Judgment, on the altar wall, took the master eight years to complete. It is approximately 66 ft. in height, and 33 ft. wide. Tremendous in its scope, it is claimed to be the most comprehensive painting in the world.

Michelangelo spent four years on the giant frescos that adorn the ceiling of the chapel. Designing the frescoes, the master worked to fit into the space he had a multitude of seperate scenes, all without making the whole confused or overwhelming.

He so contrived, by planning bronze and marble cornices, vertical pilasters, and an entablature, to convert the naturally plain ceiling into a canvas with natural divisions and stop gaps.

Central vertical panel of the ceiling picturizes biblical scenes; edges of this structure are adorned with a series of drawings of Prophets and Sibyls, each one proportioned in dignity and beauty.

Besides the biblical scenes, the ceiling has a number of nude figures in bronze, grey, or in brighter colors. These figures are claimed to be the finest examples of Michelangelo's art.

Frescoed to the hilt, decorated ornately, and utilizing magnificent marbles and carvings to enrich its setting, the Vatican Library holds treasures of literature representative of all ages and all peoples. Its books, enclosed in illuminated cupboards so that the casual visitor is unaware that the room is a library, number approximately 260,000 volumes, and 34,000 manuscripts.

This library was founded by Nicholas V about 1450; groundwork for its present magnificence was laid in 1588, under Sixtus V. The huge room is divided into two; seven large pillars, embellished with frescoes, form the dividing arcade.

Resplendent with exquisite wall murals, mosaic ceilings, and adorned with precious objects and gifts sent by foreign potentates, the Vatican library is like an artistic feast from which no one comes away hungry.

Next most interesting part of the Vatican from the viewpoint of decorative masterpieces is the Stanze of Raphael—a large salon with four smaller connecting halls. Four huge medallions in the ceiling of the main salon, representing Theology, Philosophy, Poetry and Justice, symbolically interpreted, were completed by the artist Raphael, and the murals in the Stanze were designed and begun by him, and finished by his pupils.

Raphael's frescos in this Vatican apartment are compositions in which antiquity and the modern times of his day were blended to give concrete representations of biblical happenings, mythical figures, and ancient historical religious events.

Among them are "La Disputa," "The School of Athens," "Parnassus," "Jurisprudence," and many others famed the world over for their beauty and artistry.

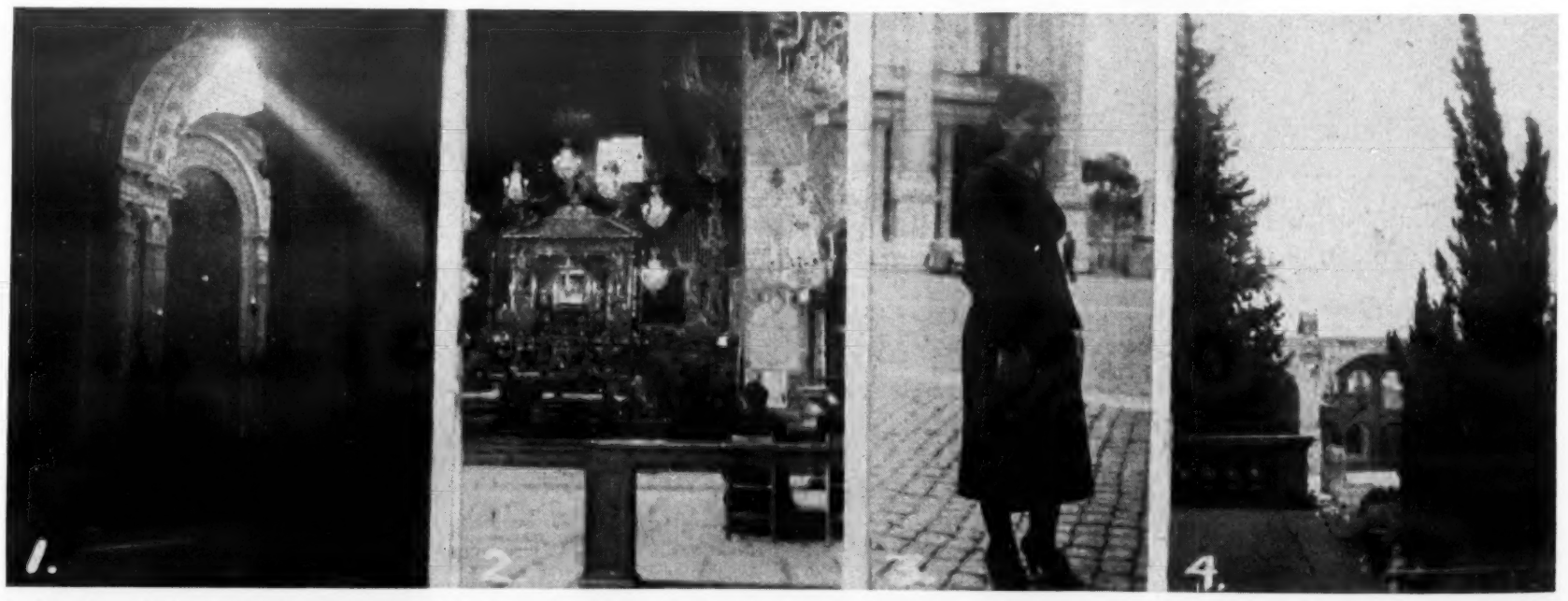
The Vatican Palace has one thing that would make it beloved to women who like to make graceful entrances—there are 80 grand staircases, and 200 smaller ones. Scattered throughout the Vatican are 20 courts, and some few 11,000 halls, chapels, rooms, and apartments. The museums in the group are claimed to be the most ancient, the largest, and most elaborate in the world.

Walls in the picture gallery of the Vatican groan under the weight of masterpieces. Pictures whose subjects and whose creators are world famous have a resting place here. Among the better known of these paintings are: Titian's "Sacred and Profane Love," Franciabigio's "Venus," the "Transfiguration," of Raphael, and works by Carlo Dolci, Domenchino, and others.

The old Romans seemed to have loved fountains, for Rome has hundreds of them. Largest and most celebrated of this city's public fountains is the Fontana di Trevi, built in 1753.

A queer legend is built around this fountain: that if you throw a coin into the water the night before you leave the city, you will return to Rome! Destiny will bring you back. The Chamber of Commerce and the Dept. of Public Works got together on that one.

Roman Cathedrals Lend an Air of Dignity



1. An ethereal shaft of light pierces the gloom of a Roman cathedral through a stained glass window. 2. Indistinctly in the foreground one may see a priest pronouncing benediction upon a Roman wedding ceremony. 3. Rosa Italiano thinks these American tourists are a trifle ridiculous. 4. Lovely garden corner in Rome.

United States Leads in Refrigerator Imports to Brazil; Market Shows Improvement in Each Year

RIO DE JANEIRO—Use of electric refrigerators in Brazil is showing a greater expansion than that of any other single type of electrical household equipment, *The Electrical Review*, London, says in a recent article on the Brazilian electrical appliance market.

In 1933 the total imports were 185,211 kg., valued at 30,446 pounds sterling. In 1934, however, the total reached 719,000 kg., valued at 114,000 pounds.

United States enjoys the bulk of this trade, the article states. Value of the imports from this country, according to Brazilian statistics, was 28,140 pounds in 1933, and 106,470 pounds in 1934. In the latter year, Germany and Argentina shipped refrigerators to the values of 3,195 and 2,556 pounds, respectively.

Three Manufacturers

In the state of San Paulo there are three firms making refrigerators. Their total production in 1933 was 411 units, valued at 22,853 pounds. There are two manufacturers in Rio de Janeiro whose products are gaining steadly in favor.

There would seem to be great opportunity for expansion in Brazil, most of the present demand being confined to commercial use.

Prices of refrigerators vary according to type, the most popular running from 22 pounds 4 shillings 5 pence to 88 pounds 17 shillings 8 pence, with a limited demand for the extra-large or deluxe types at 100 to 111 pounds. Rates of duty vary according to weight classification.

Brazil presents a market for certain types of electrical household appliances, the article states, but there are important factors to be considered. The purchasing power of a portion of the people is so low that they can afford neither the initial price nor the cost of electricity for operating the devices.

'Luxury' Appliances Sell

Further, the more well-do-to housewives seldom take an active part in the work of the household, so that there is not the same pressure to relieve the burden of household work by the installation of labor-saving apparatus. Principal demand is for those appliances of the luxury type, or those from which the family will derive direct benefits, such as radio apparatus, refrigerators, and polishing machines.

Figures on the extent of national production are not available for the whole of Brazil. Statistics for the state of San Paulo, however, reveal that in 1934 there were nine firms, with an aggregate staff of between 300 and 400, producing household electrical equipment. Capital invested amount to approximately 37,000 pounds.

Local Production Figures

Production of these factories has been reported as 411 refrigerators, valued at 23,700 pounds; 2,600 radio sets, valued at 20,400 pounds; 5,000 electric irons, valued at 1,930 pounds; 2,138 hot-plates, valued at 521 pounds; and 1,264 heaters, valued at 490 pounds.

In Rio de Janeiro, the article says, one of the most important American manufacturers of electrical equipment has a large factory which caters extensively to the local market. There are also firms making general heating and cooking devices, refrigerators, and radios.

In addition to that offered by local manufacturing concerns, there is keen competition from foreign firms who have opened branch distributing offices in Brazil. These branch offices, besides taking care of distribution and general sales, operate assembly plants and repair shops. The American firm mentioned has entered the retail field and sells direct to consumers through its own shops and a controlled chain. The same procedure is followed by other firms.

Chilean Climate Halts Air Conditioning

SANTIAGO, Chile—Due to the moderate summers experienced in Santiago and other centers of importance in Chile, there is no worthwhile market here at present for portable air-conditioning equipment, according to U. S. Consul General Edward A. Dow.

Norge's Showroom in Amsterdam

Part of the showroom at the headquarters of the Norge distributor in Holland, located in their office building in Amsterdam. At the left is Mr. Tollenaar, and right Mr. Henneman, officials of Norge in Holland, examining a demonstration Rollator unit. Commercial equipment seems to predominate, at least in this corner.

Refrigerated Truck Given Installation Trial in India

NEW YORK CITY—Frigidaire Export Division has been instrumental in placing a refrigerated truck installation on trial in India.

Three high temperature Kold-Hold cooling units are mounted vertically within the truck. Baffles are provided to regulate the circulation of air over the cooling surfaces. The condensing unit is an air-cooled Frigidaire driven by a 3-hp. air-cooled Nelson gasoline engine.

The truck is insulated with 6 inches of Alfol in addition to a 2-inch air space. Doors are insulated with 6 inches of cork. The entire body is covered by a waterproof tarpaulin painted with aluminum paint.

Reversing the usual procedure, the condensing unit is operated only during the daylight hours and the Kold-Hold units maintain necessary temperatures during the night.

Although the truck is driven between 250 and 300 miles a day in an average sun temperature of 150° F., the equipment maintains a body temperature of about 34°, and all reports indicate very satisfactory performance.

Australian Tariffs Hit Future Market for Air Conditioning

SYDNEY, Australia—Tariff restrictions against American-made refrigeration products make their prices so high as to be almost prohibitive in competition with materials manufactured in Canada, England, or other European countries, according to Frank E. Hanson, general manager of F. C. Lovelock, Ltd., Australia's largest refrigeration parts distributor.

"Refrigerators and refrigeration equipment are admitted to Australia under a special tariff item," Mr. Hansen says. "Any goods coming under this item from England or Canada would land into our store in Australia for 90%. That is, a part valued at 1 pound sterling would cost us £1.17.10 in Australian currency to get it into our store.

"Goods under this item from American, German, or other foreign countries would land in our store for 132%; that is, for the 1 pound sterling item, it would cost us £2.6.5 in Australian currency.

"It costs us approximately 23% more to land goods from America than it does from countries in the Empire."

New Tarriff System Aids Market in Argentine

BUENOS AIRES, Argentine—Compressors for mechanical refrigerators, and refrigerating units have been classified for customs purposes, with a resultant reduction of the import duty on these articles, through a resolution passed last September by the Argentine Ministry of Finance, according to U. S. Ambassador Alexander W. Weddell.

This resolution reclassifies iron compressors, imported without evaporator and condenser, under the tariff item covering "iron compressors (air or refrigeration pump)" dutiable at 25%, plus a surtax of 17% of the official customs valuation of 0.50 gold peso per kilo.

The resolution also provides that refrigeration units composed of a compressor, evaporator, and condenser, together with other parts which may accompany the refrigerating unit, are dutiable as merchandise not specifically mentioned in the tariff, at 25%, plus a surtax of 17% of the c.i.f. Buenos Aires value.

If any of these parts are imported separately, they will be classified under the tariff item to which they correspond.

This resolution nullifies a decision of the customs authorities in effect since July 25, 1935, under which compressors for mechanical refrigerators were made dutiable under the tariff item covering "automatic refrigerators, complete or not, with or without condenser" at 40%, plus a surtax of 17% of an official customs valuation of one gold peso per gross kilo.

Super-Cold Names Three New Distributors, Two For Foreign Areas

LOS ANGELES—One new sales manager and three new distributors, two in foreign countries, were appointed recently by Super-Cold Corp.

Super-Cold's account in the Republic of Panama has been transferred to Delvalle & Penso, while Frost Bland & Co. is the new Super-Cold distributor in Shangai, China.

H. W. Beddoe has been appointed sales manager of the Dallas branch. W. J. Morrison is the new distributor in San Antonio, Tex.

View in Commercial Refrigeration and Air Conditioning Section of Refrigeration and Air Conditioning Institute Laboratory and Shops, Chicago. This is part of $35,000.00 equipment installed on two entire floors.

No Gate Crashing Here!

WE CAREFULLY SELECT THE MEN WE TRAIN

Hundreds and hundreds of the men we meet, to use their own words, want to get into "this refrigeration and air conditioning game." They have heard about the remarkable strides being made in this great and growing business, and they want to be identified with its on-coming prosperity. But only a small percentage of these fellows qualify for our Training, with proper background, education, mental attitude, and ambition. That's because we are "choosy" about the men we accept for training.

Your industry has supported our work with a co-operation unparalleled in the history of industrial training. For instance, more than fifty of your leading manufacturers are officially endorsing and unqualifiedly recommending our Training program. Some six of these have even gone so far as to appoint their own engineers and executives to a Board of Governors whose duty it is to direct and supervise the Training administered by this institution, thus taking all possible precautions to see that any man taking this Training is trained along the lines these manufacturers have found to be most effective.

In return we have promised these fifty and more manufacturers that we will not accept any man for training who isn't qualified by character, education, experience, and mechanical ability, to take it. That's a big order. But we are doing just that—carefully selecting the men we are training for you.

And we are training them "right." Through a combination of shop-preparatory work done at home, and actual laboratory and shop work done in our Shops, in Chicago—under the watchful eye of engineers of proven ability, whose methods of instruction have been carefully analyzed and approved by our Board of Governors—we give you "selected" men, trained "right."

Come and see us! Visit the Institute, and inspect our laboratory and shops, which we are told are the most complete in the country. Let us make you acquainted with our methods—those methods that have made other visitors say—"You are indeed setting a new standard in industrial training."

If you cannot visit us, a letter will bring you complete details of what we believe to be the soundest and most practical industrial training program ever devised.

COME AND SEE US WHEN YOU CAN

This is a standing invitation. The next time you are in Chicago and have some time to spare, telephone Longbeach 6100, and let us send our car to pick you up. When your visit is over (stay as long or as short a time as you please) we will set you down again at any point in the city to which you may wish to go. That's how anxious we are to have you see the work we are doing.

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Climatic Conditions in Java Create Large Demand for Refrigeration in Spite Of High Electric Rates

BATAVIA, Java—Climatic conditions are chiefly responsible for the surprisingly large local demand for electric refrigeration, according to U. S. Consul Walter A. Foote.

High electric rates (24.5 cents per kwh.) and the abundance of cheap native labor have a deterrent effect upon sales of all other electric commodities, the consul declares.

Electrical appliances are imported almost exclusively from the United States, Mr. Foote continues. In fact, 76.2% of all "machines and apparatus for household use, n.s.p.f." imported into Java in 1935, came from the United States.

An astonishing variety in electric current is supplied to consumers scattered throughout Netherlands India, Mr. Foote declares, and if spot sales are to be effected, the dealer or representative necessarily must maintain a considerable stock of different models with motors or transformers, depending upon the means used to adjust apparatus to differing current characteristics.

The climate in this territory is humid and tropical. Corrosion of metal parts and deterioration must be guarded against. Doors must be particularly tight-fitting. All possible provision against sweating in the interior of the cabinet must be employed.

Consumers in Netherlands India are very exacting in their purchases of electric refrigerators, Mr. Foote states. They prefer sealed unit motors to open motors with belt and fan, because the former are more nearly silent in operation, and despite the fact that the latter are known to be considerably more efficient in this climate.

But purchasers demand a year guarantee on sealed unit motors. Refrigerators cannot be sold without such guarantee, nor without the assurance that prompt and capable servicing will be supplied by the local distributor.

The preference for the sealed unit motors is disadvantageous to a manufacturer, inasmuch as the return of defective units to the factory for repair is impracticable, Mr. Foote says. Defective units usually are periodically demolished in the presence of a factory representative.

The most popular sizes of electric refrigerators in this market, Mr. Foote reports are those with a capacity of 4 to 6 cu. ft. Enamel and porcelain finishes are equally favored, but the latter cannot be repaired locally if damaged in transit, and any such damaged boxes must be written off the order. Rapid freezing of large quantities of ice cubes is a decided advantage, he continues, as there is a fair demand from Chinese merchants who use household refrigerators solely to produce ice cream and ices which they retail to the native population at prices as low as $0.007 per cube.

Electric refrigerators are sold at a considerable advance over list prices in the United States. The distributor has not only heavy carrying charges on his stock after payment of duty and freight but also must often finance sales.

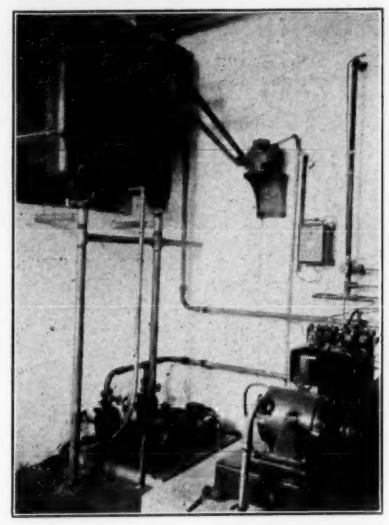
One American company has its own retail organization here and does a considerable business renting its refrigerators under contract at rates varying from 9.50 to 14.50 florins per month, depending upon the size of the unit.

This market, Mr. Foote declares, requires a distributor who can carry his own stock and who is adequately equipped to finance sales. A number of local houses meet these requirements, but difficulty may be found in interesting them, partially because some of them handle competing lines and partially because none of them need new lines.

It thus requires an effort in the way of salesmanship to place a new line with an important firm in this district, Mr. Foote says. Such firms will not consider mimeographed or multigraphed correspondence, nor will they pay any attention to communications that indicate any departure from dignified, conservative practice.

A visit by a factory representative, with foreign experience, Mr. Foote points out, would probably be more successful than any effort made by correspondence, but this market alone is not enough to warrant the expense of such a visit. Even at the best, he says, remunerative results would not appear for an extended period of time, since the market is conservative and new lines are at a considerable disadvantage merely because they are unknown.

Installation in India



Pumps used to circulate cooling water in unique Kelvinator installation in store of Spencer & Co., Madras. Water is re-cooled and returned to a big supply tank, circulating 1,000 gallons an hour with an actual use of only 200 gallons a week. The pumps are shown at the left.

Mild Climate, Low Incomes Minimize Market in Brazil

RIO DE JANEIRO, Brazil—Practically a virgin field for air conditioning, Brazil nevertheless offers a rather limited market for this type of equipment, claims U.S. Consul-General Emil Sauer, because of almost universally mild weather that prevails throughout the greater part of the year in this territory.

Another factor limiting the market for air-conditioning equipment is the low earning capacity and standard of living of the masses in this country, Mr. Sauer says.

Frequent depressing spells during the summer, however, create somewhat of a demand for units for use in hospitals, private offices, and dwellings.

As air-conditioning equipment is a new product for this market, Mr. Sauer says, there are no established channels of distribution. He believes, however, that this item would form a suitable line for dealers in electric refrigerators and radios, preference being given, of course, to some firm with facilities for servicing equipment.

In some instances, Mr. Sauer continues, commission sales agents obtain good results by appointing dealer-distributors in various districts, themselves acting as supervisors of sales and trade promotion.

Market in Ecuador For Air Conditioning Small, Says Consul

GUAYAQUIL, Ecuador—No air-conditioning equipment whatever is in use in Ecuador, as nearly as can be ascertained, reports U. S. Consul General Dayle C. McDonough.

Moreover, it is said that a new hotel being built here will not be air conditioned, although it will be a modern structure in every other respect. The manager states, however, that he may have air conditioning installed at some later date.

The air-conditioning market in this country, says Mr. McDonough, is negligible, and there seems to be little prospect of any improvement. In the mountainous interior, a temperate climate exists during the entire year, creating little need for conditioning equipment. In the coastal region where there should be a good demand for air conditioning, the market is discouraging because of the low purchasing power and because there are very few structures with glass windows of any kind.

The one possible source of air-conditioning orders from this territory, Mr. McDonough declares, lies with the owners of some of the new structures which are being erected or projected.

Collectivists Take Over Export Firm For U. S. Products

Vicissitudes of trying to operate a refrigeration parts business in the turbulent city of Barcelona, Spain, are described graphically in a letter written by Harry Walker, proprietor of Autocesorios Harry Walker, from his refuge at the Constitutional Club, London, to H. M. Robins, Detroit exporter.

Practically the entire Walker business has been paralyzed by the policy of "collectivization" followed by Loyalist, or government forces occupying the city. This dictate has been applied by the Spanish government to all business establishments employing over 100 people—into which classification Mr. Walker's business falls.

Migrating a number of years ago from London to Barcelona, Mr. Walker set up a business dealing in automotive and refrigeration parts and accessories. With careful management and aggressive policy, and exceptional intelligence in dealing with the volative Catalans, Mr. Walker's turnover of sales in his line was the largest in all Spain. He occupies a substantial building and has had more than 100 employes working for him.

The province of Catalan, and its principal city, Barcelona, have had socialistic leanings and at the present time they constitute the chief stronghold of the Loyalists. These forces have "collectivized" all establishments having more than 100 employes.

Collectivization Explained

Mr. Walker's letter from London states that this collectivization process means the taking over of a business by its employes and its operation for the benefit of the state.

Apparently the proprietor's interests are not given very much consideration; buildings, real estate, book accounts, inventory, and all other assets being blithely commandeered, the matter of compensation being considered purely an academic problem to be discussed and possibly settled some time in the indefinite future at the option of the forces now in control.

Mr. Walker's stock has been built up very largely from American sources. Some of the stock has been paid for outright and the American manufacturer is in the clear. Other parts of the stock have been paid for nominally by the deposit of pesetas in a Spanish bank, subject to remission in dollars when the exchange situation permits.

Outcome Decidedly Uncertain

Whether or not these pesetas still remain in the Spanish banks, or will be there when the turmoil subsides is a matter of conjecture. Other parts of Mr. Walker's stock consist of goods on consignment, title to which still rests in the foreign manufacturers.

In the meantime, many protests are being lodged in the American State Department and in Foreign Offices of other countries by owners of goods and creditors who cannot distinguish between "collectivization" and highway robbery.

For the present little assurance can be given them. If the Loyalists win out the principle of "collectivization" will probably be established. If the Insurgents win they cannot be held responsible for the acts of the "collectivists." So it looks as if the American manufacturers will be left holding the bag, in any event, thinks Mr. Robins.

Square D Successfully Promoted

Among the other lines which Mr. Walker has promoted successfully throughout Spain is the Square D line of pressure switches and commercial refrigeration regulators. Particularly in connection with air compressor and water pump installations throughout Spain, Square D switches are in increasing demand.

On the subject of future possibilities in Spain, Mr. Robins expresses the opinion, based on reports from several sources, that notwithstanding the violent military activities there are many parts of the country in which business is proceeding as usual. Some small losses may have to be taken, eventually, he feels, but prospective future business will much more than compensate for them.

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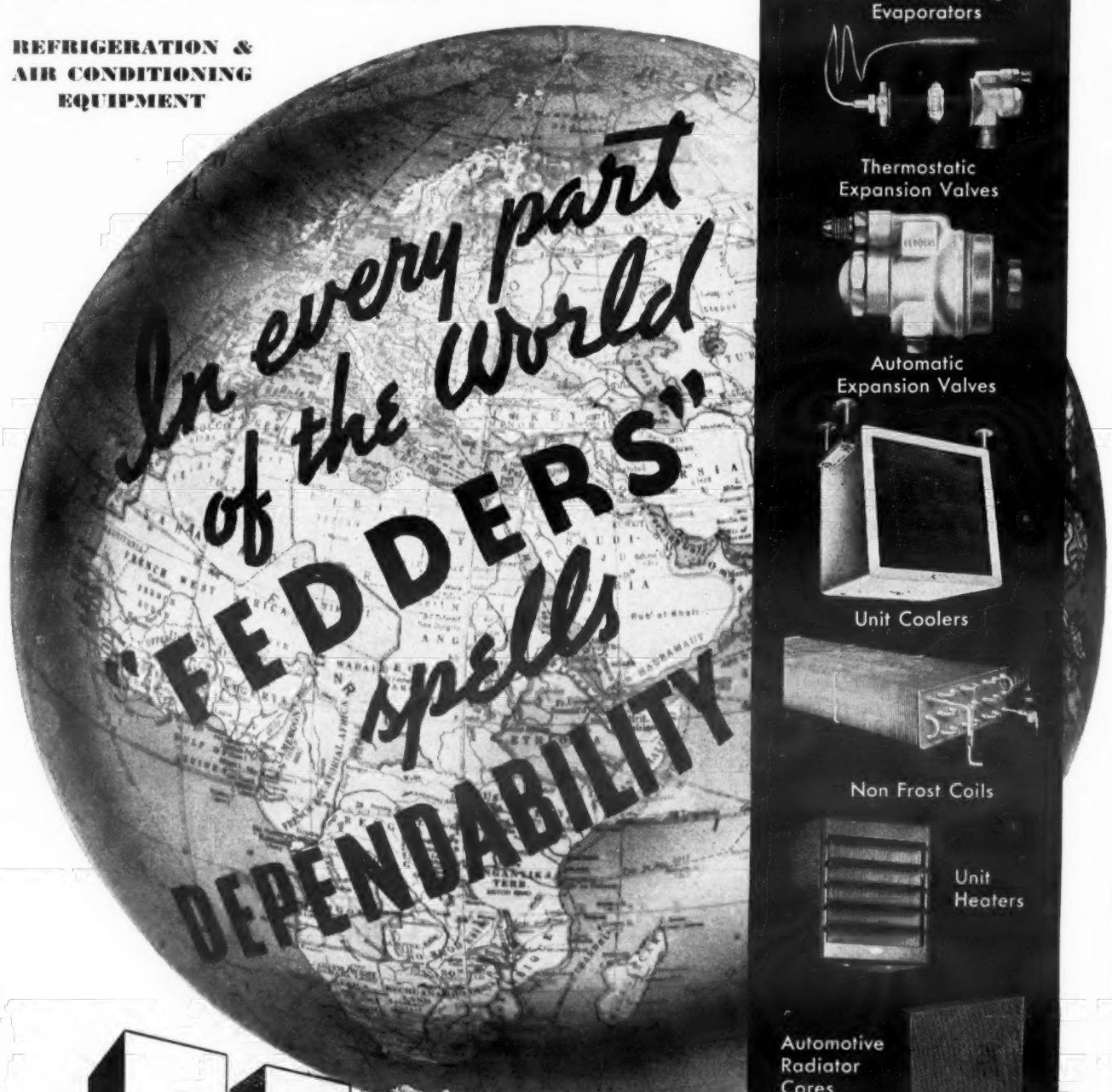

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Carrier Conditions Huge New Palace For Maharajah

JODHPUR, Rajputana, India—Air-conditioning engineers of Carrier Engineering Co., Ltd., New Delhi, were faced with an usually difficult problem when given the job of furnishing air-conditioning equipment for the $4,000,000 palace being constructed by the Maharajah of Jodhpur, one of India's wealthiest princes.

The palace, situated atop Chithhar Hill, is built of red sandstone from the royal quarries, and will cover an area of over 360,000 sq. ft. when completed. The exterior facings and a major portion of the interior decorations will be hand carved. Begun about the middle of 1933, this imposing structure is expected to be completed about 1939. Work progresses rather slowly, for many of the construction materials and much of the mechanical equipment must be transported over long distances by elephant train.

The Maharajah's palace contains a ballroom, a Durbar hall, theater, banquet hall, several luxurious suites, and a separate wing for the numerous staff—all of which will be completely air conditioned.

This new scientifically ventilated Durbar hall contrasts strongly with the medieval ceremonies which take place within it, for it is here, on the prince's birthday, that his vassals come to offer gifts as a token of submission, covering their hands with a cloth as they kneel before the Maharajah, so that their hands will not touch those of their suzerain.

The Maharajah himself, one of the few Indian potentates to be educated entirely in India, rules the third largest state in India, and receives the fabulous annual revenue of $5,000,000, a great portion of which is spent for state improvements. He owns and operates the finest airport in India.

Early in 1930 the Maharajah summoned the court architect (Lanchester & Lodge, London), the construction contractor, and Eric Wilson, Carrier representative, to discuss plans for his future palace.

The system employed for the palace requires over 900 tons of refrigeration, and handles 100% outside air at all times. Inside temperature will be maintained at 78° F., and relative humidity at 54%. Evaporative cooling will be used largely at present, although several WW type humidifiers are being installed, complete with piping and pumps, capable of using refrigerated water for dehumidification purposes.

This modern air-conditioning system is quite a change from the primitive methods of ventilation and cooling which are still commonly employed throughout India. The "punkahs" or large cloth fans moved by means of ropes and pulleys, constitute one of the most common cooling systems in this country.

Even more effective in hot dry weather is the *khas khas tattie.* This consists simply of a fibrous matting which is fastened in a window or doorway in such a manner that the prevailing hot wind blows against it. A coolie then throws water against the *tattie,* keeping it continually moist. As the hot wind blows against the fibre, it is cooled before entering the room.

Tel-Aviv Engineers Must Tell Story in Many Languages

TEL-AVIV, Palestine—Refrigeration salesmen in America who feel that they have a tough time building up a sales story may count themselves lucky that they are not in Walter Seligsohn's shoes.

Mr. Seligsohn, refrigeration engineer with Pasternak and Mullens, Servel distributor in Tel-Aviv, is now in America for a course in training in sales, installation, and service engineering.

Born in Germany, and having learned English in the schools there, he is getting his refrigeration education in English.

When he gets back to Tel-Aviv, he is faced with the problem of putting over his sales story, not only in German and English, but also in Hebrew and a host of other tongues spoken by the repatriated Jewish people.

"Electric refrigeration is still new in Palestine," Mr. Seligsohn says. "Three years ago electric refrigerators were first sent in large quantity to our country. They came mostly from the United States.

"Since that time, however, electric refrigeration has been rapidly gaining ground, and is now spreading beyond the borders of Palestine into the vast neighbor countries—Syria, Iraq, Transjordan, and Egypt.

"If you take into consideration that in all of the above-mentioned countries live millions of inhabitants who are just coming in touch with modern civilization, you will understand that this part of the world will be one of the most important outlets for industrial goods in the future.

"The old traditional means of communication by camel caravans is already disappearing, and and automobiles and trucks are taking its place.

"Some years ago it was a daring adventure to go, for instance, from Damascus to Bagdad through the desert. Today you would arrive in a huge, comfortable bus with restaurant, bar, and bedroom, in less than 24 hours.

"American industry already has and will continue to have an important part in the upbuilding of these countries, and, thanks to the sub-tropical climate, the American refrigeration industry will find a broad market for its products in the future."

U. S. Refrigerators Lead Electrical Imports in Syria

BEIRUT, Syria—Refrigerators continue to lead the field of electrical appliances imported here, according to U. S. Vice Consuls Easton T. Kelsey and Daniel Gaudin, Jr., with a value of 17,248 Syrian pounds (at present rate of exchange one Syrian pound equals $1.32 in U. S. currency) in 1934, and 31,444 Syrian pounds in 1935.

American imports accounted for 14,198 Syrian pounds of the 1934 total, while refrigerators valued at 26,402 Syrian pounds were imported from the United States in 1935.

Refrigerator imports by units for 1934 were as follows: United States, 68; Palestine, 39; France, 5; Sweden, 1; other countries, 35. For 1935, the import list by units read: United States, 322; Palestine, 96; Czechoslovakia, 96; Sweden, 55; France, 39; other countries, 20.

A total of 148 units were imported in 1934, while 628 refrigerators were imported in 1935.

Honduras Market Limited By Low Living Standard

LA CEIBA, Honduras—Demand for electrical appliances in Honduras is confined to the Americans employed by the fruit exporting firms, and a scattering of well-to-do Hondurans, reports U. S. Vice Consul Edgar L. McGinnis, Jr. The standard of living of the average Honduran native is very low.

German Firms Hold Lead in Istanbul

ISTANBUL, Turkey — Electrical household appliance business here, like so many electrical lines in this country, is controlled by European, and especially German firms, according to U.S. Assistant Commercial Attache John A. Embry.

By far the larger share of local imports is handled by three principal dealers, two of whom operate as distributors of Allgemeine Elektrizitaets Gesellschaft and the Siemens Co., respectively. Distributors of these two German concerns have a special arrangement with Satie Co. (Societe Anonyme Turque d'Installation Electriques), a subsidiary of the Istanbul electric generating plant and street car company, who distribute their respective products to consumers on an installment basis.

A similar arrangement exists between the local representative of Thompson-Houston Co. and Satie Co.

These arrangements naturally seriously affect sales possibilities of all other dealers operating on this market who are unable to sell except on a cash basis, and therefore obtain only a very small portion of the sales in and around Istanbul, Mr. Embry declares.

The third leading local concern, as well as a number of smaller dealers, concentrates its business efforts on the interior. These firms purchase their goods practically exclusively from Germany, Mr. Embry says.

German firms, in addition to low price and attractive material, offer to place on their equipment, free of charge, special trade names and the name of the local firm. Also, many local dealers are able to visit the annual German industrial fairs, selecting and purchasing equipment during these visits.

In spite of these facts, and although leading American trade mark products would be too expensive to meet the competition of leading European firms, and although products of the smaller American firms are not sufficiently known here, it is readily admitted in the trade that American firms might succeed in entering this market to an appreciable extent if credit terms were extended by American suppliers to meet local requirements calling for from four to six months acceptance.

Make-Shift Case & G-E Unit Rescue Batavia Display

BATAVIA, Java—Ingenuity of the Batavia office of International General Electric Co. materially aided the success of the recent Culinary Show at the Trade Exposition and Commercial Fair, here, according to C. H. Winner, of G-E's Java staff.

Prevailing high temperatures in the Dutch East Indies make it impossible to prevent such foodstuffs as jellies, creams, and whipped creams from rapidly spoiling unless adequate refrigeration is provided. Otherwise they can not be preserved long enough even for committee inspection.

Faced with this refrigeration problem, complicated by the fact that no properly insulated display cases were available, the G-E Java representatives determined to use ordinary display cases without insulation of any type.

Borrowing these cases from another business concern, they lined them up, removed the head ends, and joined them all together. Then they installed two cooling units in this enlarged display arrangement, and connected them to two compressors.

The units maintained an average temperature of 50° F., says Mr. Winner (except at the farthest corners), and the makeshift refrigerated cases fulfilled their purpose.

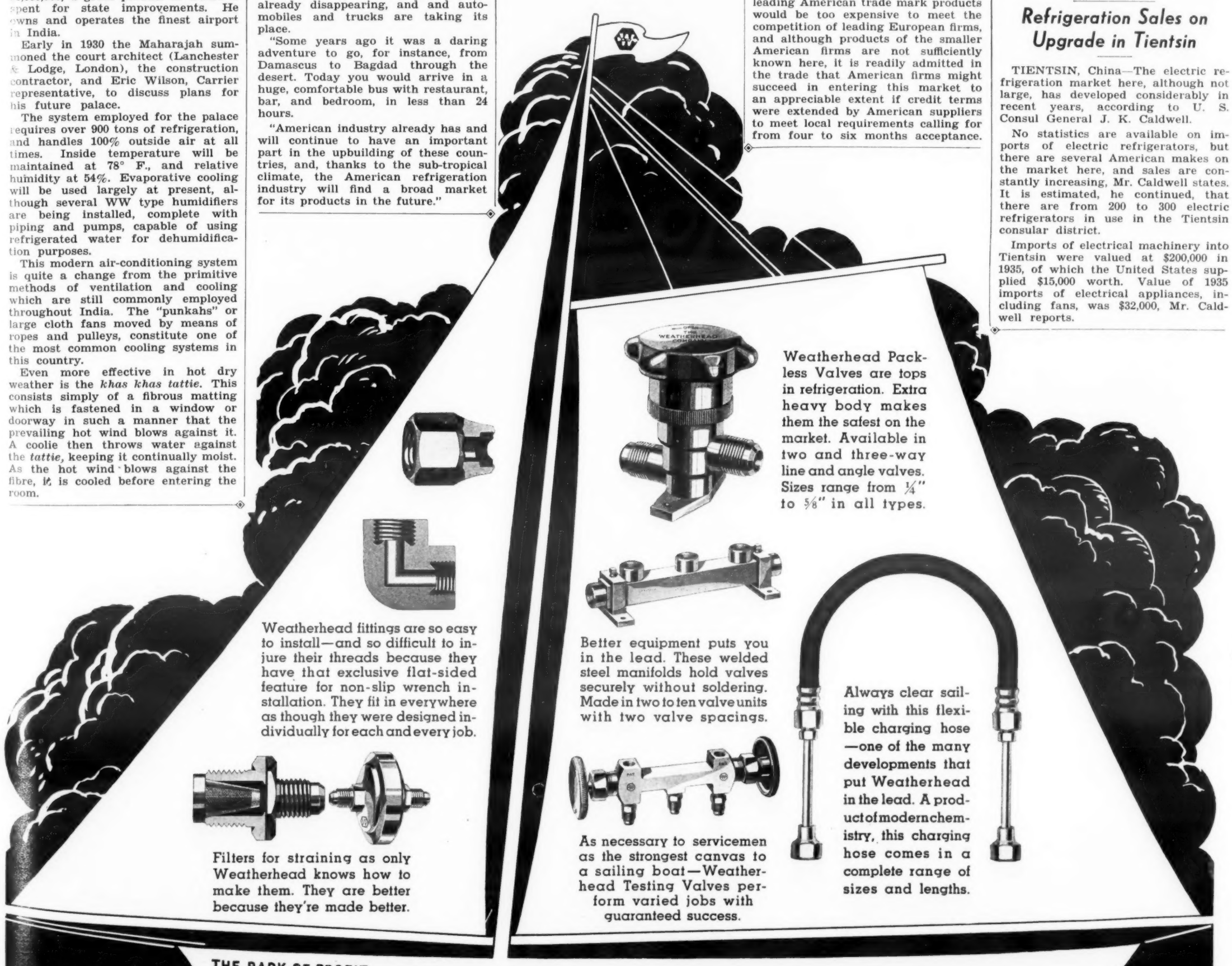
I. G. E. maintained an air-conditioned booth of its own at the exhibit, in which air conditioning itself was the most emphasized feature. Included in the display were the following units: an immersion bottle cooler, a water cooler, an ice cream cabinet, a washer, domestic refrigerators, a model commercial refrigerator, and various small appliances.

Refrigeration Sales on Upgrade in Tientsin

TIENTSIN, China—The electric refrigeration market here, although not large, has developed considerably in recent years, according to U. S. Consul General J. K. Caldwell.

No statistics are available on imports of electric refrigerators, but there are several American makes on the market here, and sales are constantly increasing, Mr. Caldwell states. It is estimated, he continued, that there are from 200 to 300 electric refrigerators in use in the Tientsin consular district.

Imports of electrical machinery into Tientsin were valued at $200,000 in 1935, of which the United States supplied $15,000 worth. Value of 1935 imports of electrical appliances, including fans, was $32,000, Mr. Caldwell reports.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CONSULS DESCRIBE MARKET IN VARIOUS COUNTRIES

Education Needed to Open Mexican Market to U. S. Refrigeration Makers

By W. H. Long

Occupying high rank among Latin American republics in standpoint of economic and financial stability and recovery from the business depression of the early thirties, Mexico today stands upon the brink of trade expansion unparalleled in her history, according to Carlos Palacios Roji, Mexican consul stationed in Detroit.

After decades of internal revolutionary strife typified by the rebellion led by Pancho Villa, Mexico has since 1914 strengthened her industrial and foreign trade positions under the revolutionary government. The present administration, led by President Lazaro Cardenas, pursues a liberal tariff policy and fosters international commercial relations.

Latest consular figures on Mexico's international commerce show that normal expectancies indicate all-time import and export highs to be established this year.

Imports for the first six months of 1936 are valued at 223,000,000 pesos, more than half the 1935 figure, with each month showing new gains. Export totals for the first seven months of this year aggregate 467,000,000 pesos, well ahead of last year's mark at the same time.

A complete tabulation of Mexico's foreign trade figures covering the past 11 years and partial reports for this year demonstrate the remarkable recovery the Latin American nation has made from the business depression, together with future commercial possibilities in view of world-wide recovery.

Calculated in pesos ($.28) the tabulation is as follows:

	Imports	Exports
1925	390,000,000	682,000,000
1926	381,000,000	691,000,000
1927	346,000,000	633,000,000
1928	357,000,000	592,000,000
1929	382,000,000	590,000,000
1930	350,000,000	458,000,000
1931	216,000,000	399,000,000
1932	180,000,000	304,000,000
1933	244,000,000	364,000,000
1934	361,000,000	697,000,000
1935	439,000,000	812,000,000
1936	223,000,000*	467,000,000†

*6 months; †7 months.

Since the inception of the Cardenas government on Dec. 1, 1934, as can be seen from the table, Mexican import and export business has boomed. This, according to Consul Roji, can be attributed to general business recovery and the low-tariff expansionist policy of the government.

On July 31 of this year, the Mexican treasury announced that it had cash on hand amounting to 25,970,000 pesos. This marks the most stable financial position attained by the country in recent years.

Federal revenues in Mexico have continued on their upward curve. Last year revenue collection amounted to 334,600,000 pesos, leaving a surplus of 32,500,000 pesos. For the first six months of this year, consular reports show collections of 220,500,000 pesos, a figure 26,400,000 pesos above treasury estimates for the period. An increase of close to 30% in revenues is expected for 1936.

"The United States and Mexico have long enjoyed the position of being each other's best customers," said Mr. Roji. "With economic conditions rapidly improving in both nations, I feel sure that more American products will be shipped to Mexico in the future and more of ours to this country."

More than 60% of Mexican exports —chiefly bananas, mineral ores, sisal (for rope), hides, and fresh vegetables during the off season in other countries—are shipped to the United States or are trucked to towns along the Texas border for transport by rail.

Practically everything imported by Mexico, Consul Roji said, comes from the United States. The country does not maintain an extensive merchant marine, and depends upon American industry for its machinery, automobiles, manufactured textiles, and most other products which are not made in Mexico.

The Cardenas government has maintained a policy of non-discrimination against imports from abroad, particularly those from the United States. Lack of a developed industrial order has compelled Mexico to seek most of her manufactures from America, and tariffs are modified according to the ability of home industries to care for demand.

Lately the duty on iron imported into Mexico was lowered considerably in order to allow Mexican factories to buy at the lowest possible cost, thus aiding them to produce on a large scale for the home market. Agricultural machinery now comes into the country duty-free, most of it from American companies, so that Mexican farmers may buy more advanced equipment used in modern farming.

Since 1932, the value of the peso has remained practically constant—about $.28 in United States currency. Pegging of the peso in relation to the dollar has been practiced for several years because of the close trade relations of the two countries. Fluctuations in the rate of exchange are minor due to this interrelation.

Some idea of the importance of the American export trade to Mexico may be gathered from the fact that the value of products shipped from Michigan to Mexico during September, mainly automobiles, was $348,781.20. These figures were obtained by the Mexican consulate in Detroit from invoices.

"Refrigeration in Mexico is not really anything new," according to Consul Roji. "Although, of course, domestic refrigerators are found only in the wealthier class of homes, most hotels, restaurants, and other such places have had electric refrigerators of American make for years.

"I would say the chief problem of American manufacturers who want to sell more of their electric refrigerators in Mexico is to educate the Mexican people to the idea of refrigeration," he said. "They see very little of it, but they want to buy modern conveniences if they are convinced that they are practical."

Exhibitions Suggested

Asked how he would suggest that expanded refrigeration sales be promoted in his country, Mr. Roji stated that "exhibitions" would be most effective. House-to-house canvassing and American home demonstration methods would be of little avail, he said, but Latin Americans dearly love to see a machine "working" before their eyes—a demonstration outweighs all sales talk and high-pressure selling.

When he returned to his native country in September, 1935, Mr. Roji was astonished to find extensive displays of electric refrigerators in electrical stores, both in Mexico City, the capital, and in smaller towns in the Republic's 28 states, two territories, and a federal district.

These, he believes, are responsible for rapily increasing shipments of American units to Mexico. Export figures compiled by the NEWS show that dollar value of domestic models shipped to Mexico have almost tripled in the past three years.

In 1933, this figure was $114,380. It reached $180,267 in 1934, and last year sky-rocketed to $308,227. Export figures for this year are not available as yet, but it is generally believed that the $400,000 mark will be passed by the first of the new year.

Commercial Sales Quadruple

Commercial shipments in units up to 1-ton have quadrupled in three years. From a dollar value of $8,702 in 1933, sales jumped to $15,445 in 1934 and to $32,754 last year. The Mexican market for commercials is doubtless practically untouched, according to these figures.

Parts sales, although progressing less rapidly, are nevertheless noteworthy. The 1933 figure was $53,044; in 1934 it was $58,651, and last year it had jumped to $72,258.

Although Mexico's equable climate on the high tablelands which cover practically all the populous areas of the country does not place heavy demands on refrigeration facilities, the Mexican official believes that his countrymen are ready to abandon the use of ice as a cooling medium in favor of electric refrigeration—just as soon as the idea becomes more than an expensive and seemingly unattainable foreign luxury.

"I do not think that American refrigeration companies will ever touch the Mexican market until they send us models which cost much less than those which are coming in at present," stated Consul Roji. "You must remember that most of Mexico's 16,000,000 people are poor or in moderate circumstances—they *want* to buy, but how can they when a refrigerator represents several months' earnings?"

Ice boxes, used in most Mexican homes, are manufactured by native companies, as well as electric toasters, water heaters, stoves, and other appliances. The companies which produce these products are small, but their output is considerable and sufficient for the demand, Mr. Roji said.

Power lines now cover practically all of Mexico and electric light and power service is reaching rural homes and those of the working classes in the cities and towns. Most of these companies are owned privately, but receive government aid as President Cardenas endeavors to push modernization plans through federal encouragement. Compania Mexicana de Luz y Fuerza, of Mexico City, is the largest power company in the country.

A significant factor in promoting electric refrigeration sales in Mexico is the large foreign resident population, representing 600,000 of a total population of 16,000,000. There are about 60,000 Americans, of which one-third live in Mexico City, and about 300,000 Spaniards, 50,000 French, 40,000 Germans, and 15,000 British. These people, said Mr. Roji, may well serve as object examples because many of their homes have refrigeration.

Transportation Helps

The Mexican government's sponsorship of new and improved transportation facilities also has a bearing on the future of refrigeration.

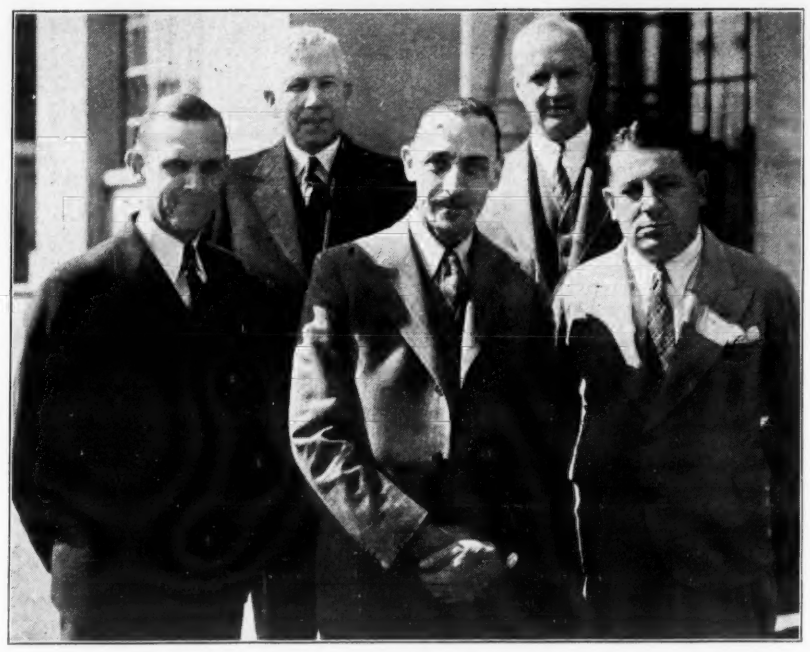
Recently the government organized the Lineas Ferreas de Mexico (Railroad Lines of Mexico) which is undertaking the construction of four new lines. To date, the Republic has contributed 10,500,000 pesos to aid the project, and President Cardenas has sent a bill through the Federal Chamber of Representatives authorizing the company to float a loan of fifty million pesos additional.

These new lines are: (1) From Puerto Mexico, Veracruz, to Campeche where a connection is made with the United Railways of Yucatan —linking Mexico City with the Peninsula of Yucatan—500 miles in length; (2) Line from Ixcaquistla, Puebla, to Chacahua Bay, Oaxaca—262 miles long; (3) Line from Santa Catarina, Michoacan, to Zihuatanejo, Guerrero —220 miles in length; (4) Line from Fuentes Brotantes, northern district of Lower California, to Punta Penasco, Sonora.

Together with the magnificent highway from Mexico City to Laredo, Tex., which the government completed this year, and improved roads in the interior, truck and trailer shipments and freight transportation are now common in Mexico. Trade routes are open and the country awaits development of its standard of living.

"Air conditioning is practically unknown in Mexico as yet," said Mr. Roji. "We have it in a few theaters and one or two stores, but there is small demand for it in domestic uses. You must remember construction problems are difficult in this line in Mexico, but I feel that some day—maybe soon—air conditioning will dawn on Mexico as refrigeration is doing."

Study Frigidaire Service



Two overseas service managers recently visited the Frigidaire factories at Dayton to be brought up-to-date on refrigeration and air-conditioning problems. They are shown here with factory officers. First row, left to right, V. A. Hetzel, Frigidaire installation and service manager; H. L. Andrews, service manager, General Motors South African, Ltd., Port Elizabeth; and E. Zumsteg, service manager, General Motors Java, Batavia. Back row, L. C. Shannon, Frigidaire foreign manager; and D. W. Van Patten, Frigidaire foreign department engineer.

Revolution Clouds Present View of Spanish Market

By W. H. Long

Out of the financial, industrial, and economic ruin that becomes progressively worse as the Spanish revolution continues unabated may come a good market for mechanical refrigeration, or no market. Meanwhile the American industry watches with anxious eyes a country where $173,764 worth of domestic units was sold last year.

That American refrigerators will sell just as well in Spain after the revolution ends as they did last year is the contention of Lazaro Bartolome, resident Detroit vice consul for the present Madrid government, who never knows when his five years of service will be ended if the Franco forces triuph, or whether he will be retained if and when the Spanish government changes hands.

To substantiate his optimistic view regarding the American export market in Spain, Mr. Bartolome stated that undoubtedly Secretary Cordell Hull's reciprocal trade agreement, negotiations on which were terminated by the outbreak of the revolt, will be signed by the new government order which emerges.

Spain's duties on goods imported from America have been high during late years because of the Smoot-Hawley tariff which caused the Red government to retaliate by boosting its own tariff scale on American products.

These duties will be lowered appreciably if the new trade pact is concluded between the United States and Spain, Mr. Bartolome feels, which will take up some of the slack between purchasing power devastated by the war and resulting lower costs of American refrigeration equipment in Spain.

Remembering the trade boom which followed the World War, the Spanish vice consul believes that when peace comes to Spain and her financial credits are reestablished, the American export market will find a profitable field for development in Spain.

Electric refrigeration is a prime necessity in Spain because of climatic conditions which make food preservation difficult, and because of the relatively high cost of ice where natural sources of supply are practically non-existent. The number of wired homes in the country is high, and power facilities under private ownership are extensive.

Both electric refrigeration and air-conditioning have not as yet made a notable imprint on the certain market which exists for them when economic life enjoys its normal status. As in other southern European countries, only the better class of homes and stores have mechanical cooling equipment.

No exports on Spain's imports of American air-conditioning equipment have been made since July, when the revolt got underway. Up until that time, the country had imported only $1,163 worth of cooling apparatus, showing how little the Spanish market has been touched by American concerns.

Despite high tariff barriers, American refrigerators, both household and commercial, have sold well in Spain during the past three years. In 1933 only $53,599 worth of domestic units was exported from the United States, but in 1934 the figure had made a 400% gain to $198,957, and fell off slightly last year to $173,764.

Gains in commercial unit sales in the up to 1-ton classifications were unhindered through 1935, when $81,544 worth of equipment was sold in Spain. Two years ago the mark stood at $47,784, a three-fold increase over the 1933 figure of only $18,808.

Taken as an entity, the American refrigeration export market to Spain last year represented a total value of $334,475.

Spain, said Vice-consul Bartolome, has always bought two to three times as much from the United States as she has sold. Chief American imports are automobiles, trucks, electrical equipment, and machinery for various industrial uses. Prominent among Spanish exports to the United States are olive oil, cork, rope, nuts, and native agricultural products.

This unfavorable trade balance is one condition which the new Spanish government will probably seek to remedy. Signing of the Hull reciprocity pact will no doubt aid in this direction, Mr. Bartolome feels, and the resultant increase of purchasing power will mean more sales to American refrigeration companies.

Spain has a few small factories owned by native investors which manufacture small compressors, but most mechanical units are either made by American firms with Spanish plants or sent to Spain from this country.

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Lower Prices & Education of Public Necessary in Italian Market

By W. H. Long

American refrigeration companies seeking to improve their export business with Italy are now encountering three significant trade barriers which make the future outlook doubtful: (1) Italian resentment against foreign nations because of the recent trade sanctions; (2) the Italian government's attitude of strict reciprocity on trade balances, and (3) the increasing ability of the Italian refrigeration industry to supply existing home demand.

Despite these conditions, Royal Italian Vice Consul E. Guastone Belcredi of Detroit believes that the American industry may confidently expect a better market for its product in Italy if base prices are reduced to conform to the income scale of the Italian consuming public, and if the idea of electric refrigeration is sold to the Italian people.

Although the United States did not pursue a policy of sanctions against Italy during the Ethopian crisis, Italian resentment against foreign interference with her colonial policy may possibly result in discrimination against the American industry from the consumer standpoint, even though trade and diplomatic relations between the two nations are entirely amicable.

Nationalism Demands Buy-at-Home

Since Mussolini's ascension to power and the subsequent rebirth of the idea of Italian racial supremacy, national pride and patriotism has demanded that Italians buy at home as much as possible. Consequently, a product produced by a foreign power is "foreign" to the Italian consumer.

Several months before the trade sanctions were begun, Italy's commercial policy was revised to a basis of strict reciprocity from the most-favored-nation dictate of preceding years. Heavily adverse trade balances with most nations forced this policy change in order to protect home industry, according to the Italian "Business and Financial Report" for July, 1936.

Home Production Up

Reports from several Italian refrigeration companies to the NEWS indicate that electric refrigeration production is increasing in Italy, and American export figures for the past three years bear out this fact.

In 1933, the industry shipped $67,458 worth of household units to Italy, and in 1934 the figure had more than doubled, reaching $162,541. Last year, exports of American refrigerators to Italy were cut in half when only $79,965 worth of domestic units were shipped.

When exports to most other European nations are on the upgrade, this indicates that native industry is supplying the home market in Italy to a much greater extent than before.

Commercial Also Down

Exports of commercial units up to 1-ton and refrigerator parts have followed this general shipment curve during the past three years. Commercial exports were $31,698 in 1933, rose to $49,051 in 1934, and fell back to $42,488 last year. Parts exports were valued at $49,892 in 1933, $94,434 in 1934, and were down to $79,689 in 1935.

Repeal of economic sanctions against Fascist Italy is not expected to deter the Italian government from following policies calculated to reduce adverse trade balances to a minimum. Balanced exchanges of goods and services with all countries is the avowed object of Il Duce. This means a high tariff schedule on foreign products.

Money to Be Stabilized

Early in October, the Council of Ministers decided to bring the exchange rate between the lira, dollar, and the pound sterling back to the 1927 stabilization quotas of 19 and 92.46 respectively. Prevention of a rise in Italian costs of living is one object of this move.

At the same time the additional 15% import duty decreed against most foreign commodities in December, 1931, was removed. The regular duty on wheat was reduced from 750 to 470 lire per metric ton, and similar reductions were made on flour, imported cattle, fresh meat, olive oil, eggs, bacon, lard, etc.

Charges for electric power—a very important item in considering the potential market for American refrigeration in Italy—were blocked at their present rates by the government two months ago. This rate will prevail for two years, and is relatively much higher than costs for electric power in this country.

Strict Control Over Imports

When the Italian government began strict control of foreign exchange dealings in May, 1934, import transactions were not affected, but in the fall of that year it was decreed that import shipments must be cleared through the customs and shipping documents certified before exchange would be made available.

Permits Needed on Imports

On February 19, 1935, the Finance Minister announced that a system of special permits had been declared on all imports, including electric refrigeration equipment, and that import quotas would henceforth be narrowly limited. Payment for imports must depend on the supply of foreign exchange which is yielded chiefly by exports, and were placed under an Exchange Superintendent.

Following the imposition of general trade and exchange restrictions in February, 1935, a system of private clearings, or barter and compensation trades arranged by individual importers and exporters, obtained official recognition, with the provision that all such arrangements must be approved by the proper government authorities.

Reciprocity Progressing

Reciprocity agreements between the United States and Italy are progressing favorably, according to Vice Consul Belcredi, and should produce an increased export trade for America to the Italian market.

He stressed the point that increased purchasing power must be built up in his country through a magnified Italian export trade before perceptible advances will be made in the market for American refrigerators. With that accomplished Mr. Belcredi is confident that the future is bright.

Conditioning Sales Low

Air-conditioning shipments from this country to Italy for the first nine months of 1936 have amounted to only $2,660—a figure far below par considering the potentialities of the Italian market and the need for room cooling in a warm climate.

No explanation can be advanced for this low figure other than that Italy has not as yet been sold on the idea of air conditioning, or that American companies have not sufficiently penetrated the Italian market with effective export organizations.

The Italian vice consul feels that if the idea of electric refrigeration and the obvious necessity for it are promoted in Italy by a program of advertising and backed by an attractive scale of lower prices, the average consumer will respond to price appeal if nothing else.

Prices Too High

"The average American-made electric refrigerator costs about $250 in Italy," he said. "This is the equivalent of 5,000 lire, the cost of a small Italian automobile, and represents about three months' wages for the average working man. Obviously such a high-priced luxury cannot be sold very widely in a country where most people are poor according to the American standard of living."

If an American-built refrigerator could be produced to sell at about $75 in Italy, Mr. Belcredi believes it would sell extensively and compete favorably with home-built products, which at present seem to be displacing foreign models in the Italian market.

Ice boxes are used in most Italian homes where income is sufficient to provide cooling facilities. Several artificial ice companies are in business in metropolitan areas.

Contrary to popular opinion, the vice consul says, all Italian power companies are privately-owned. Most municipal power stations are owned by investors, and the government exercises a more or less well-defined policy of rate control over them. In the past few years, electric light and power rates have fallen considerably, but are still high enough to cause the Italian consumer to economize rigidly on the current he uses.

Two Power Rates

Two separate rates are maintained: one for electric light, and another for power consumption alone. A lower rate is offered for power used during the night, and consequently most Italian families with electric hot water heaters in their homes use them at night to store up heated water for use during the day.

If a refrigerator could be produced to take advantage of this lower rate plan effective at night, Mr. Belcredi said, more Italians probably could be induced to purchase refrigeration equipment.

Other electrical apparatus produced by Italian companies is relatively lower-priced than it is in the United States. The average Italian home has a radio which costs between $10 and $15, he stated, and such appliances as toasters and hot-plate stoves sell at a correspondingly lower figure than on the American product.

In the future for electric refrigeration and air conditioning in Italy's new Ethiopian empire, the vice consul sees a splendid opportunity for American companies to exploit a new market. Of course, with the lack of adequate electric power lines and the relatively low standard of living of the Ethiopian people, the field must be marked *as* futuristic.

Cuban Sales Down For October, but Well Above 1935

HAVANA, Cuba—Following the usual trend, sales of electrical apparatus, supplies, and materials for October were somewhat below the figure reported for July, according to C. H. Ducote, assistant U. S. commercial attache here.

Volume of demand for replacement parts for electrical apparatus, and for supplies used in building construction, remained steady, however.

Appliance sales of Havana's principal power company, although slightly lower than the July volume, showed a decided increase over sales at this time last year, Mr. Ducote reports.

Active demand for domestic refrigerators has existed this month as a result of the intensive sales campaign of last month, when 258 domestic units were sold by the power company and 474 by dealers.

The political situation in Spain has resulted in a pronounced decline in new sales of commercial refrigerators in recent weeks, as well as in payments on recently purchased commercial units. Most commercial purchasers and prospects are of Spanish origin, and these individuals have greatly restricted all their commercial operations, Mr. Ducote states.

Air conditioning has made little progress in Cuba, according to Consul General C. R. Cameron, in spite of the efforts of American manufacturers represented here.

Cuban buildings, Mr. Cameron explained, are usually constructed to utilize advantageously the natural facilities for maintaining comfortable interior temperatures. Most buildings are of masonry, with high ceilings, and numerous windows fitted with adjustable shutters.

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Government Aids Foreign Trade —Vital to Belgian Prosperity

By Al Jones

As the most densely populated country on the mainland of Europe and second only to England in the whole world in the matter of people per square mile, Belgium depends a great deal on foreign trade for subsistence. In recognition of this fact, the Belgian government has always been liberal in permitting goods to enter the country at very low tariff rates.

Despite the enlargement of tariff walls in other countries, Belgium in 1935 entered into clearing or compensation agreements with several foreign nations and on March 18 of that year placed all transaction in foreign exchange under the control of the Central Exchange Bureau.

This information comes from the Bureau of Foreign and Domestic Commerce in a special circular prepared by the Finance Division headed by Grosvenor M. Jones, and published Aug. 19, 1935.

The publication likewise states that the gold content of the belga was reduced by 28% as of March 31, 1935, and from the resultant profits of the revaluation an exchange equalization was set up to assist in the maintenance of the belga on the international markets.

So successful was this move that that year placed all transactions in buy freely in foreign exchange and to meet all their obligations.

This movement on the part of the Belgian government evidently benefited American exporters of refrigeration equipment and parts, for in 1935 the total value of such exports was considerably in excess of that of the preceding year.

Compilations issued by the Bureau of Foreign and Domestic Exchange attest to the marked increase. In 1934, the export value of domestic refrigerators from the United States to Belgium was $88,862, a $6,500 increase over 1933. The export value in 1935, however, jumped to $156,081.

Exports of commercial units of a capacity not over 1-ton also increased, but to a lesser extent. The 1933 figure was $77,507; that of 1934 was $74,812. The value in 1935 was $93,974.

After dropping some $14,000 between 1933 and 1934, the value of exports of refrigerator parts to Belgium from American manufacturers increased in 1935 from $80,728 to $104,534.

The Belgian market for American-made air-conditioning equipment during the first nine months of 1936 was not particularly large, and, taking it month by month, was erratic. The export value in January was $251, and during the next two months the value increased to great extent. Figures for February and March were $1,251 and $1,491 respectively.

Then in April came a drop to $907, followed by a further decline in May to $819. The trade for June was not reported.

In July, the export value reached a new high for the year at $1,759, but even this was topped by August's exports which amounted to $2,180. The figure reported for September was a mere $77.

For the first three quarters of the current year, then, the total value of exports from the United States to Belgium of air-conditioning apparatus, including portable units, amounted to $6,005, less than a hundredth of the entire world exports from American factories to foreign markets during the same period.

That Belgium's trade with nations is reviving after hitting the low point of the depression in 1932 is indicated by the tonnage of sea-going vessels entering the port of Antwerp each year. The annual report, furnished by Pierre J. Boeye, Belgian consul in Detroit, shows that since 1932 the inward tonnage has increased each year.

The total tonnage for the low-point year was 19,666,678, and the totals for the years 1933, '34, and '35 were 20,439,195, 20,536,384, and 22,041,022 tons respectively. The greatest tonnage ever recorded by the port officials of Antwerp for any one year was the 24 325,103 figure of 1929.

The number of ships unloading at Antwerp has increased from 9,407 in 1932 to 11,125 in 1935.

To Philippines

J. Neal Clemmer, air-conditioning engineer of Baker Ice Machine Co., Omaha, says goodbye to F. E. Hartmann, general sales manager, and President R. L. Baker as he takes off on the first leg of a 10,000-mile air jaunt to Manila, to further Baker's sales in the Philippine market.

Low Financial Standards Keep Finnish Market Undeveloped; Vice-Consul Urges Educational Campaign

By Al. Jones

Air conditioning and electric refrigeration have made but little headway in Finland, and, although there is a potential market, it is doubtful that either of the two industries will expand very greatly in the near future in that country.

This opinion was held by George H. Heideman, attorney-at-law and vice consul for Finland in the Detroit area. There are a number of reasons for the almost total absence of air-conditioning and electric refrigeration equipment in Finnish homes, principal of them being the comparatively low financial standard of the people.

Few inhabitants of Finland enjoy the conveniences of modern industry such as are known by a majority of Americans. This is true of almost every country in Europe. Central heating plants are confined to the homes of the wealthy minority, and such appliances as air-conditioning and refrigerating equipment are practically undreamed-of luxuries.

Another reason for the lack of the two conveniences as given by Heideman is the length of the winter season in Finland. During the cold months natural refrigeration is a satisfactory means of preserving food.

At present, the people of Finland have neither an urgent need nor a particular knowledge of air-conditioning and electric refrigeration and their benefits. It is Heideman's contention that in order to create a large market in Finland the people of the country must first be educated to the value and uses of the products.

He also suggested that the most satisfactory method of determining the size and potentiality of the Finnish market would be either to send a representative of an advertising agency to Finland to study the prevalent conditions or to obtain from a Finnish advertising agency a report on such matters.

Finland itself is in a secure state of prosperity, as evidenced by its prompt payment each year of the war debt to the United States and by the fact that the national budget has been balanced for each fiscal year throughout the general depression.

The type of advertising and sales campaign that would bring the best results, Heideman believes, would be in the form of informative advertisements in newspapers and magazines. In this way the interest of the prospective purchasers would be aroused, and they would at the same time be able to learn something of the workings of air-conditioning and refrigeration mechanism.

A house-to-house campaign, if conducted at present with conditions as they are, would be of little value in the creation of public interest.

Statistics published by the Bureau of Foreign and Domestic Commerce, division of the United States Department of Commerce, provide a means of following the trend of U. S. exports of electric refrigerators to Finland from 1929 to 1935.

In 1929, just before the beginning of the world-wide economic depression, there were exported to Finland by American companies refrigerators and refrigerating equipment having an aggregate value of $42,299. Of this, $15,332 worth was equipment of a capacity measuring up to a quarter of a ton, both household and commercial. The remaining $26,967 worth consisted of equipment of a capacity ranging from a quarter of a ton to a ton. In 1932, the total value of electric refrigeration exports from the United States to Finland was only $3,896, the entire amount being comprised of household refrigerators.

The total value of refrigerators, both household and commercial up to a capacity of one ton, exported in 1933 was $3,972. Household machines made up $2,476 of this amount. In addition there were exported parts for refrigerators having a value of $1,589.

A great increase was noted in 1934, for in that year the value of household refrigerators exported to Finland was $10,865 and that of commercial units up to one ton was $12,980. The value of parts exports also jumped, being $12,604 for the year.

The increase continued throughout 1935. In that year, the household machine export value reached $12,931; commercial, up to one ton, $16,233; and parts, $24,329.

Figures compiled by the Bureau of Foreign and Domestic Commerce concerning the exports of air-conditioning equipment show that for the first nine months of the current year a total value of $647 is represented by American exports to Finland.

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Dependable Electric
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FOR many years Copeland has enjoyed a world-wide reputation for dependable and economical electric refrigeration. Every civilized country has its quota of pleased Copeland owners. Many newer settlements far off the beaten track are today enjoying the benefits of dependable Copeland performance. Whether at home or abroad Copeland is constantly winning new friends—and holding the old. A few territories are still available in the United States, and we offer an attractive franchise for distributors in foreign countries.
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Consul Advises Cultivation of Market in French Colonies

By W. H. Long

"If I were in the refrigeration business myself, I would spend all my time and efforts in cultivating the export trade with the France colonies," said Maxime Rainguet, consular agent for France in Detroit, when asked his opinion of the future of American sales to his country.

In the French colonial possessions with their 140,000,000 population, situated mainly in the tropic climates of Africa and the Far East, lies an enormous market for both household and commercial refrigeration which cannot be supplied by the French industry, according to M. Rainguet.

Since the recent devaluation of the franc, trade between the United States and France has shown considerable improvement both in the import and export fields. New reciprocity agreements are in the offing, French quota restrictions are gradually being lifted, and observers feel that by the first of the year the export trade with France will be better than it has been in several years.

Quota Increased

Since the trade pact signed by the two countries May 6, the quota on American refrigerators coming into France has been materially increased over the 1935 level when 8,498 quintals (220.4 pounds each) of domestic refrigerators were allowed, and 4,472 quintals of refrigeration apparatus, including air-conditioning equipment and commercial units.

Recent cuts in French duties on American-built refrigeration equipment have brought tariffs down to about 50% of their former size, says M. Rainguet. The French government, anxious to stimulate its trade relations with this country, has adopted a policy of reducing trade duties to the lowest level consistent with the economic situation at home and the progress of home industry.

French Imports High

Within a few years, according to the French consul, questions of quotas and duties on most products shipped between the two nations should be separated from their close connection with government finances in France, and a new era of low-tariff trade should dawn. Fluctuations of the franc from its present 4.65 standing has had a direct bearing on export shipments from the United States deviating from the normal.

France has from the beginning been one of the best export customers of the American refrigeration industry, having occupied a place among the first three for the past several years. Last year exports of refrigeration to France were exceeded only by those to the Union of South Africa and the United Kingdom.

Effect of Economic Situation

The drop of French shipments of domestic units from the all-time high of $979,247 in 1934 to last year's figure of $785,837 was mainly due to the unsettled condition of the franc and the relatively unstable state of the French economic situation. From 1933 to 1934, exports in this division from the United States had more than tripled.

Both commercial units and parts shipments were also below 1934 highs last year, the former having fallen from $399,373 to $226,765, and the latter from $462,369 to $376,923. Both had practically doubled the 1933 marks of $172,638 and $265,471, respectively, in the 1934 peak year.

Reasons for Good Market

Continental France, with a population of about 45,000,000, offers an excellent market for electric refrigeration for several reasons. Among these are the high standard of living of the country, an enormous tourist trade which enforces a demand for refrigeration and food protection, and the fact that the idea of electric refrigeration is perhaps better established there than in any other continental European country.

Why, then, is the percentage of saturation of French wired home market so low?

"Because the average household refrigerator costs too much in France, and because few Frenchmen can afford it," answers Consul Rainguet.

A Luxury in France

He points out that the average Amercian-built domestic model costs $175 in France, or about 3,750 francs —as much as the ordinary working man earns in two months. Consequently, an electric refrigerator to the average French householder is classed as a luxury rather than a convenience in much the same manner as a $700 car is a luxury to a family in moderate circumstances in the United States.

He explained that although electric refrigeration is common in Paris in places which the American tourist trade visits, and in the better class of homes and food stores, it is still a rare sight in the great majority of small urban homes and in the rural areas.

Refrigeration Substitutes

Various substitutes and other modes of cooling are used, the most popular of which is, of course, the ice box. Many French families follow the regular schedule of visiting the nearby fish market or butcher shop to secure their ice each morning. These shops act as icemen for their districts.

"Undoubtedly if the American manufacturers could build us good models selling for around $100, they would sell many more of them in France than they do now," M. Rainguet stated. "It is quite difficult for Americans to realize just how much of a luxury an electric refrigerator is in France at current prices. Yes, I realise that duties are still pretty high, but they are coming down rapidly and the price still remains too much out of the reach of most Frenchmen.

"It is what we call an 'article de luxe,'" said the French consul. "If Madame Duval next door has one, Madame Gaston wants one too, but Papa Gaston shakes his head and tells her that maybe next year he will buy one—if he can save up enough. You see, the French do not walk down to the corner store and buy a refrigerator on the spur of the moment. It is something to be seriously considered for months at a time."

Payment Plans Out

The suggestion that a system of time payments would obviate this difficulty was scouted by M. Rainguet.

Frenchmen, he said, look askance at deferred payments on household conveniences. Shortly after the war, time payments were introduced on automobiles, furniture, etc., but the idea never attained widespread success.

Reiterating his belief that the French colonial market is the most promising at the present time, the French consul pointed out that large colonies of Frenchmen are engaged in business in the large African colonies of Algeria, Tunis, and Morocco—each of which has a population of about 10,000,000.

Refrigeration Needed

The blistering heat of tropical suns make refrigeration a necessity in these three, and in French Indo China, Martinique, Madagascar, Senegal, the French Sudan and French Guinea, Somaliland, Cameround, and other French possessions.

Here commercial refrigeration sales should be profitable, he believes. Vast quantities of foodstuffs are sent to these colonies yearly, and the problem of cooling and preservation is a pressing one.

Air Conditioning in Colonies

As electric power lines are pushed further into the African interior and into remote regions in the other colonies, air conditioning becomes a present possibility. Today very few installations have been made in the French colonies, but if the idea were sold in these sectors the market should be excellent.

Shipments of air conditioning equipment to France itself during the first nine months of this year totaled $37,327. Asked if he thought this figure was lower than it normally should be, M. Rainguet replied that he expected it to increase considerably as reciprocity and quota restrictions became more favorable.

Organizations Helpful

Two refrigeration organizations in France—the Association Industriale du Froid and the Institute Internationale du Froid—both have done much to bring home the idea of mechanical cooling to the Republic.

The first of these was founded in 1920 and includes a membership of refrigerator manufacturers who are under government supervision, and may receive financial aid when government help is deemed necessary. The other, also formed in 1920, is an official organization for all companies.

French power companies are divided between private and government ownership. The proportion of wired homes is close to that of the United States in urban and most suburban areas, so electric power difficulties do not present a problem to export organization interested in developing the market.

Next year the Paris Exposition ("Exposition Internationale") offers an opportunity for the American industry to demonstrate and exhibit its refrigeration products on the comparative scale of the Century of Progress exposition in Chicago.

Improved Economic Conditions Should Boost Exports to United Kingdom

By W. H. Long

Restoration of purchasing power to the British consumer by improving business conditions of the past year is the chief reason why American exports of electric refrigeration to the United Kingdom should reach a peak within the next two years, according to L. C. Hughes-Hallett, His Majesty's Consul in the Detroit area..

Economic conditions are improving so rapidly in Great Britain, says Mr. Hughes-Hallett, that markets previously dormant and subnormal are showing unprecedented expansion, particularly among the working classes whose purchasing power has been practically nil during the depression years.

Among these, although not as vitally affected according to export figures, is the market for American-made refrigeration. The United Kingdom was last year second best purchaser of exported mechanical cooling apparatus, being exceeded only by the perennial number one market, the Union of South Africa.

Exports Increased in 1935

Where last year most major exports showed a slight decline due to economic instability or exchange troubles arising from the new currency alignments, America shipped a higher dollar value of household models and refrigeration parts to the British Isles than ever before. Commercial shipments fell off less than 1% under 1934 peak figures.

In 1935 American companies exported $896,728 worth of domestic units to the United Kingdom, a jump from $842,524 in 1924, and more than double the $403,522 of 1933. Similarly, parts shipments reached a new high of $523,988, considerably above the 1934 mark of $479,064, and again almost double the $287,105 exported the year before.

Drop in Commercial Sales

Only in the commercial field did a slight drop manifest itself, and this was negligible—$359,577 as compared with $362,385 in 1934. In 1933 the United Kingdom commercial market for American units was only $142,876.

Thus the British market for American refrigeration represents perhaps the strongest hope of the industry for increased exports during 1937 and the years to follow. No figures for this year have been made available as yet, but it is felt that the market will be equally good if not better. Mr. Hughes-Hallett expects it to show marked improvement.

Was Refrigeration Engineer

His observation on the British market and its future are made doubly impressive by the fact that he turned from a career as a refrigeration engineer and efficiency expert in the Argentine to enter the diplomatic service in 1918. He speaks with assurance and sound knowledge when discussing electric refrigeration.

Mr. Hughes-Hallett began as an apprentice refrigeration engineer in the Dartford shops of J. & E. Hall, Ltd., then and today one of the largest producers of commercial equipment in the Empire. Here he worked with carbon dioxide apparatus, which was then the favorite of the Admiralty and was extensively used in the South American banana trade.

In 1909, as efficiency engineer for the Swift and at other times the Armour packing plants in the Argentine, the British diplomatist was required to calculate operating costs on the then popular basis of 7½ sheep to one bullock killed in the slaughterhouses. All consumption costs were figured on the number of cattle slaughtered—"no cattle, no employment," as Mr. Hughes-Hallett tersely put it.

Interested in American Industry

In his several years as chief consul for the Empire in the Detroit hub of the refrigeration industry, he has been especially interested in the American industry and has made detailed reports of its progress to the Department of Overseas Trade in London.

Today, he maintains, American companies stand on the brink of a potentially great market for their products both in the British Isles and in the numerous colonies and possessions of the Empire. The crux of the situation is, he says, expressed in two words—"Refrigeration Education."

Living conditions in the United Kingdom are most nearly analagous to those in this country of all the nations in which mechanical cooling has made a perceptible penetration. Yet income scales are lower, prices of the product are higher, and refrigeration is still a luxury instead of a common convenience—balance the last two with the first, Mr. Hughes-Hallett believes, and the export boom will soon begin.

But the export picture has an encouraging side which is either discounted or not properly considered by superficial observers. It lies in the rapidly decreasing basic conservatism of the masses of the British buying public toward purchases of comparatively new products for the home. Refrigeration by mechanical means is prominent in this list of former shop window luxuries, now vital parts of the British home.

Started During World War

According to the British consul, this broadened outlook and desire for modernity began during the World War years when contacts with other peoples outside the British Isles were frequent. These naturally led to the British wanting what other nations had in the line of home conveniences. Today they are buying them in increasing quantities, and refrigeration should get its share of a promising consuming market.

Mr. Hughes-Hallett points to the recent trip of 80 members of the Junior Car Club of the United Kingdom to Detroit as an example of what broadened contacts are doing to stimulate British desire for refrigeration products. Thirty automobile loads of these visitors stayed at the Hotel Statler in Detroit as guests of the American Automobile Association, and there many of them had their first experience with air-conditioning apparatus.

'Overwhelmed' by Air Conditioning

"Their reaction to air-conditioning could be summed up in a single word," says Mr. Hughes-Hallett, "and that is —overwhelmed! I addressed the group on one occasion, and they told me they never even imagined that America was as wonderful as they found it. Their enthusiasm was carried home with them, and you may be sure that 80 prospective purchasers of new things left Detroit. They want the latest—nothing else will do now."

It is this sort of first-hand contact with electric refrigeration and air-conditioning, he believes, that is building a great future market for these products among the British. So much enthusiasm was aroused over the first group's visit that two more are coming next spring, and the British consul is arranging to have a group of Americans return the visit next year.

Program of Education

But although progress is being made in creating the desire for refrigeration in the United Kingdom, Mr. Hughes-Hallett pointed out that a specific program of refrigeration education must be gotten underway if the masses are to be reached and tangible improvement made in the market. To reach the 50,000,000 people in the United Kingdom, more than one group's visit and a few advertisements are necessary.

Appeal to the British market, he says, can be made effective by using one of the most successful lines of attack used by the industry in building its market in this country—appeal to the customer's pride in his home.

The English are a home-loving race and proud of their possessions, however humble. Convince them that mechanical refrigeration is not only a convenience but also a mark of the modern home—"a thing of beauty and a joy forever"—and definite progress will be made.

Climatic Variations

Climatic variations in the British Isles are not as wide as those in this country, and hence the need for refrigeration is sometimes thought to be less there than in the United States. But one characteristic of the English climate must be remembered, and used as a sales feature—the high humidity of the atmosphere which makes the London fog famous the world over.

High humidity makes food spoilage relatively frequent. Mechanical cooling by means of the household and commercial refrigerator controls this, and provides against atmospheric conditions encountered in the Isles. Not only refrigeration but air conditioning enters the picture in this regard.

"We are both noted and reviled for our heating system," says Mr. Hughes-Hallett. "Dry heat caused by open fireplaces which are generally the only source of warmth in the average English home, the damp climate, and cold rooms—all these make air conditioning necessary as a health measure and a needed convenience."

Central heating systems are almost unknown in the United Kingdom. Not only in homes, but also in some of the largest hotels the only heat is provided by open fireplaces. One look at the high annual rate of colds, pneumonia, and rheumatic conditions in the country should convenience the American air-conditioning industry that here lies a potentially enormous market, once the idea and its practicality "takes" with the populace.

British Manufacturers

Exports of air-conditioning apparatus have improved steadily during the first nine month of this year, $41,498 worth of equipment having been shipped in that time. Contrasted with the prospects for air conditioning in the British Isles, the amount seems insignificant, even at this comparatively early date of market penetration.

British indexes list only the following firms as manufacturers of air-conditioning equipment at the present time: J. & E. Hall, Dartford; Hall & Kay, Ashton-under-Lyne; Ogden Engineering Co., Manchester, and Smethurst Industries, Manchester. Thirty-four manufacturers of electric refrigeration equipment and parts are listed.

When the United Kingdom Pure Food Law concerning chemical food preservatives was made effective in January, 1927, commercial refrigeration was given an impetus which shown results in more than doubling American exports of commercials up to 1-ton in the past three years—from $142,876 in 1933 to $359,577 last year.

This act of Parliament forbade the use of borax as a food preservative, and placed rigid restrictions on the use of sulphur dioxide and benzoic acid. Thereby mechanical refrigeration was given a boost in the small commercial ranges for food stores, butcher shops, restaurants. etc.

Promotional Campaign

At the same time, two electrical associations—the Electrical Manufacturers and Electrical Development societies—began a promotional program for mechanical cooling and ice refrigeration. Results in raising both home industry production and the American export trade were notable.

Ice is still the most common means of refrigeration in the United Kingdom. Purchases of it are made daily at fish markets and other shops by householders with ice boxes, but according to Mr. Hughes-Hallett thousands of homes are without any cooling equipment at all, many shops still display their foods and meats on open slabs where bacterial infection is imminent, and florist shops have no cold chambers for keeping flowers fresh.

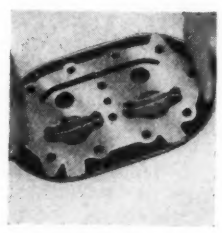
One British idea pertinent to refrigeration must be overcome—a widespread aversion to cold foods and drinks. Englishmen never use ice in their whiskey and soda, as is common in this country. Ice cream is popular as a dessert and confection, but most varieties of cold foods and drinks have only a small sale in the Isles. But the need for food preservation cannot be denied, whatever national food tastes are.

Advantage Over British Firms

Despite the progress made by the British industry in supplying its home market, it is the opinion of Mr. Hughes-Hallett that the specialization of the American industry in electric refrigeration and air conditioning, together with its superior facilities, still give it an advantage over the British firms, thereby assuring a stable and improving market for some years to come.

Slum clearance programs now underway in England and Wales also offer food for thought in regard to refrigeration. Sir Kingsley Wood, Minister of Health, estimated two months ago that 350,000 additional houses were required to complete the program. At present 6,500 homes are being built in this construction monthly, and refrigeration is a need in each of them.

What! REPLACE BOTH VALVES *in a few minutes?*



Those all-important suction and discharge valves offer no complicated replacement problem—not the way Brunner builds! Compactly assembled in a complete-unit valve plate (see illustration above), these valves can be replaced (if the need arises) by any mechanic in a few minutes' time and without loss of refrigerant. The result: a compressor good as new, ready for many more years of economical service . . . Brunner Refrigeration and Air Conditioning Units are like that throughout: a rugged, enduring construction, so designed that repairs are few, and always cheaply made. Send for new Brunner Refrigerating Equipment Catalog describing units for applications from 100 lbs. to 15 tons of refrigeration. Brunner Manufacturing Co., Utica, N.Y., U. S. A. West Coast Branch Office and Warehouse: 1501-09 West 8th St., Los Angeles, Calif.

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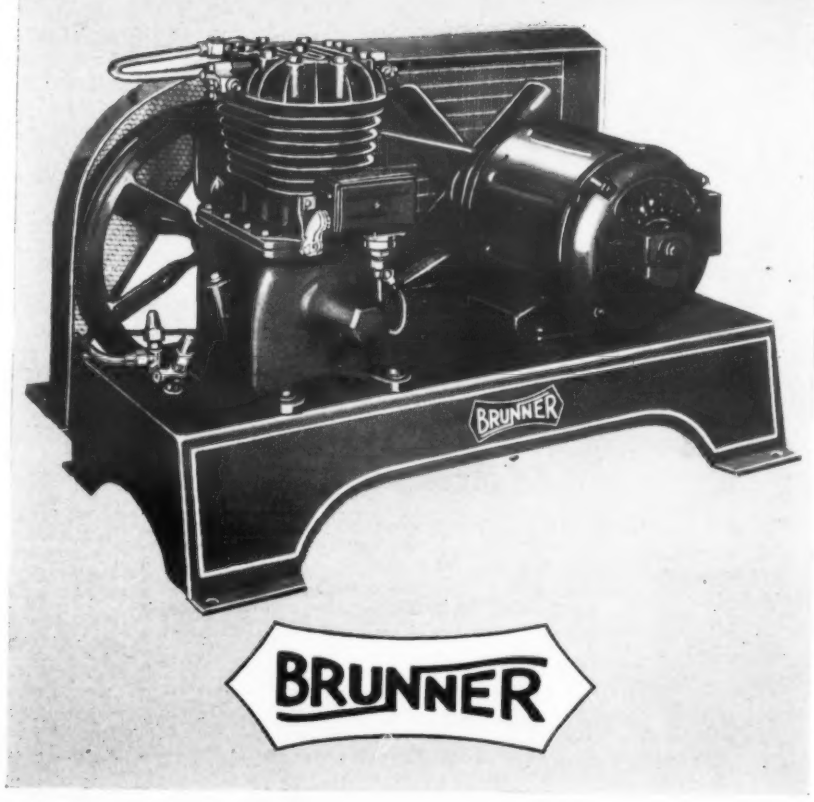
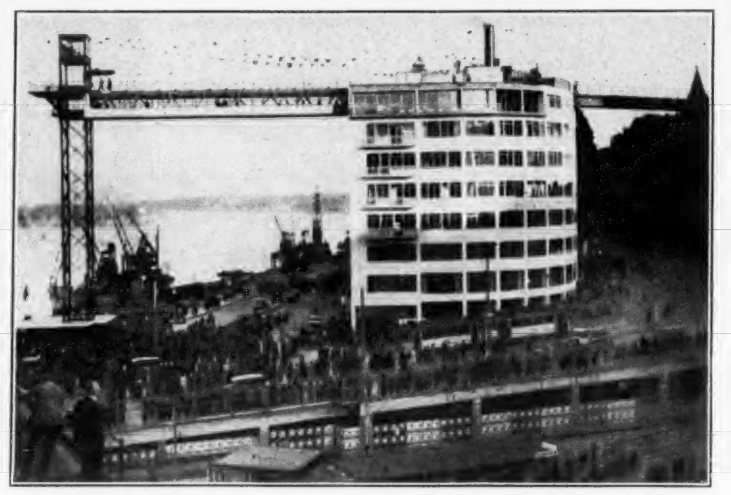
Heavy duty air cooled unit for large commercial applications . . . 2 cylinder compressor . . . 1½ H. P. motor . . . famous for economical performance . . .



BRUNNER CONDENSING UNITS and COMPRESSORS

Functionalistic Architecture Feature of Improvements Showing Swedish Prosperity

Recent dedication of a new traffic ramp on an island in Stockholm. Beneath the ramp (center) can be seen an under-street garage, and under another section (right background) are stores. The light-colored building (center background) is the office of the Stockholm cooperatives, while to its left is the office of "Luma," largest Swedish electric light concern.



"Functionalistic" architectural design of the office building of Stockholm's "Kooperativa forbundet" office. On the top floor of this building is a restaurant overlooking the city, where Editor George Taubeneck dined during his visit to the city. The outside elevator and runways connecting the top floor with a city street are Sweden's idea of modernistic convenience.

King Gustav V, beloved 77-year-old monarch of Sweden, inspecting the new office building of the Kooperativa forbundet in Stockholm. At the left, Princess Sibylla, wife of the Crown Prince, and on the right, Albin Johansson, director of all Sweden's cooperatives. This photograph was snapped on the roof of the "sky restaurant" atop the building.

Large Cuban Market Awaits Refrigerator in $75 to $100 Price Class, Consul In Detroit Reports

By W. H. Long

"When the American household refrigerator industry produces a dependable model selling in Cuba for between $75 and $100, I am sure that Cubans will buy them in large quantities," stated Major Ignacio de Algarra, Cuban consul stationed in Detroit, when asked his opinion of the future market for American-built units on the island.

Remarkable strides ahead have been made in refrigerator exports to Cuba during the past few years, but the market in the island population of more than 4,000,000 is practically untouched, especially in the rural districts where new power lines make electricity available, the Cuban diplomat stated.

Dollar volume of domestic units shipped from United States to Cuba has more than tripled between 1933-35. In 1933, the figure stood at $57,113. A year later it was doubled when shipments reached $115,900, and last year $194,692 worth of household models were installed in Cuban homes, an exceptional figure when it is considered that Germany bought but $7,532 worth of American units last year and Italy but $79,965.

The need for electric refrigeration in Cuban homes has long been felt, says Major de Algarra, but relatively low incomes among the great mass of the Cuban consuming public makes the American standard of costs prohibitive, and few people outside the wealthy and upper middle classes have had any experience with mechanical cooling.

But they want it, he maintained, because "you cannot even drink water without ice in Cuba." Tropical heat conditions make ordinary drinking water brackish, and food must be bought and consumed the same day to avoid spoilage. Cuban housewives buy their ice early in the morning and use it almost exclusively for keeping food fresh.

Costs of ice are high because the island has no natural ice supplies, and all of it must be made by brine cooling. Use of electric refrigeration in the homes of American residents and other foreigners has brought the idea home to the urban masses, but the possibilities of its becoming a convenience rather than a costly necessity has never been established.

Since the signing of the Reciprocal Trade Agreement between Cuba and the United States in September, 1934, shipments of American units to the island have boomed.

"This trade pact showed beneficial facts from the day it was signed," the Cuban consul said. "All sectors of Cuban economic life began to pick up as soon as sugar shipments to the United States resumed their former size, and now the government expects these next few years to show bigger trade gains between the two countries."

Cuba's dependence on her sugar trade for natural internal and foreign purchasing power makes it one of the few countries of the world whose single-product status reflects in immediate consuming reverberations from the largest business house to the smallest sugar plantation as exports rise or fall.

In the years before 1933, extremely high American tariffs on Cuban sugar produced a worse depression in Cuba than was experienced in the United States. Business was practically at a standstill, and importation of goods from this country suffered accordingly.

Settled Internal Conditions

Since the end of internal strife after the Machado government fled en masse to other countries, Cuba's purchases from the United States have rapidly approached normal. This is reflected in the figures cited above concerning imports of American refrigerators.

A coalition of the Republican, Liberal, and Nationalist parties now controls the Cuban government, with Dr. Miguel Mariano Gomez, former mayor of Havana and son of a former Cuban president, heading the Republic.

This government introduced the policy of lower tariffs based on the new favorable interchange of commodities. Duties on automobiles, for instance, were reduced between 25 and 50%, and on electrical apparatus, including all forms of refrigeration equipment, tariffs were lowered 33% on American-built imports.

Separate Set of Tariff Duties

Cuba maintains a separate set of tariff duties on imports from the United States and on those from other countries. Duties on American products are decidedly lower due to the fact that the interchange of commodities between the two countries far exceeds all others, and because of Cuba's dependence on the American market for her sugar sales.

Now that the sugar market is so favorable, and that internal consuming power is reestablished, Major de Algarra believes that the time is ripe for American companies to develop the Cuban market.

Everything is favorable to that end, he feels, because Cuba will probably never build her own refrigerators, and the production of other countries in electrical refrigeration is so small as to be no threat to American domination in the world market for mechanical cooling.

Private Power Companies

Power lines, owned by private firms, now cover the island in all districts. The largest of these is the Compania Cubana de Electricidad with headquarters in Havana. This company and others are the main outlets for sales of electric stoves, water heaters, and various electrical appliances used by Cuban families.

Electric rates, although reasonable, are still considerably above the level of this country, mainly because Cuba has no sources of natural electric power. It is generally felt, however, that the government will seek to lower electric rates in the near future as a part of its policy of improving the Cuban standard of living through federal agencies.

Air conditioning is still practically unknown on the island, only a few theaters having made installations in the past few years. Due to the peculiarities of Cuban home and factory construction, it is felt that "manufactured weather" will have to await the future for general realization in Cuba, but Major de Algarra stated that small individual conditioners for rooms in homes and offices may find a good market—if sales are pushed.

Exports of air-conditioning equipment from this country to Cuba have improved so far this year, with $5,902 worth of apparatus having been shipped during the nine-month period ending September 31. Most of this equipment was small individual home and office conditioners, with a few installations for stores.

As a means of approaching the latent Cuban market for refrigeration, the Cuban consul recommended display advertising and public exhibitions of refrigerators on a much larger scale than has ever been undertaken in past years.

Asked if the American sales method of home calls, direct mail approach, and free home demonstrations would "work" in Cuba. Major de Algarra smiled broadly.

"If a Cuban wants to buy, and can buy, he will. If he doesn't, no salesman can make him," he stated. "Create the desire for mechanical refrigeration—educate him to the idea—and you will sell refrigerators. With the proper approach, I feel that the market will be surprising."

Neither will the American system of time payments induce Cubans to buy, contends Major de Algarra. Most sales on all products are made for cash.

That certainly would not deter the efforts of the American industry in exploiting the Cuban market.

Sweden's Advanced Standards of Living Make It an Active Market Despite Competition of Cold Weather

By W. H. Long

American refrigeration equipment can be sold abroad regardless of geographical and climatic conditions if the export trade with Sweden may be taken as a criterion. And according to Carl Berglund, Swedish vice-consul stationed in Detroit, future possibilities for the market make it probable that present figures will be dwarfed within a few years.

Although Sweden is one of the most northerly countries in Europe with a cool climate and a considerable part of its area above the Arctic Circle, and despite its population of only 6,000,000—less than that of New York City—almost $400,000 worth of refrigeration equipment, parts, and air conditioning was shipped there last year by American companies.

Progress of the American export trade in refrigeration with Sweden has been remarkably consistent since 1933, and each year thereafter new highs have been set in household, commercial, and parts exports in the face of 1935 declines in several other major countries.

Increase in Past 3 Years

From a $48,631 export business in domestic units during 1933, shipments jumped to $110,804 in 1934, and reached $182,894 last year. Vice-Consul Berglund expressed the opinion that the 1935 peak will be exceeded when this year's figures are released, principally because Sweden's imports from the United States are increasing this year in almost all mechanical sectors.

Shipments of commercials from America to Sweden have tripled since 1933. In that year, the export market in large-job equipment was valued at $20,341, going to $46,261 in 1934, and reaching $69,038 last year. The same ratio has held good in parts exports, starting at $35,188 in 1933, and jumping to $58,902 in 1934. Last year this division represented an export value of $120,897, more than double that of the previous year.

American-built air-conditioning exports for the first nine months of this year total $7,807, an improvement in the Swedish market for mechanical cooling equipment and an indication, says Mr. Berglund, that Sweden's purchases in this field will continue to increase as general business conditions improve.

"The state of mechanical development among the Swedes has made the benefits of electric refrigeration easy for all to see," said Vice-Consul Berglund in discussing electric refrigeration in his native country. "Sweden is one of the most advanced countries in Europe from a mechanical standpoint, and modern conveniences are wanted in all homes. You don't have to convince Swedish people that electric refrigeration is a useful home convenience."

This statement is borne out by the fact that the Swedish standard of living is the highest in Europe, and taken collectively is as high as that of the United States. Therefore, selling the idea of electric cooling does not present the problem that it does in other foreign nations. The Swedish market wants the product and will buy it as rapidly as finances permit.

Considering the formidable competition offered by the Swedish-built Electrolux refrigerator, the rising value of American exports in all three divisions is noteworthy. Increasing parts shipments indicate that more units are being assembled in Sweden's refrigeration factories.

Mr. Berglund shares the opinion of several other consuls—that although home industry is encouraged by the Swedish government, the excellence of the American product, superior facilities offered by American methods of mass production, and the established acceptance of American units assure a valuable market for several years to come.

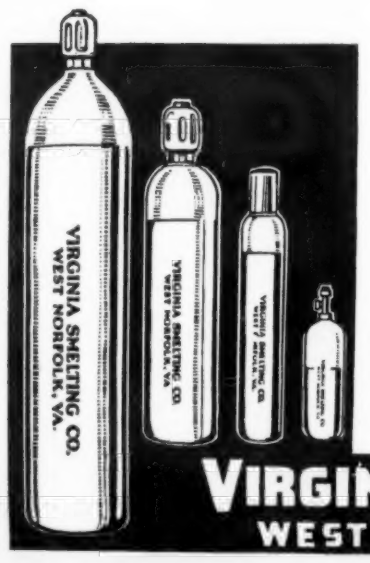
No Unemployment in Country

Sweden's high scale of purchasing power is demonstrated by the fact that practically no unemployment exists in the country. In fact, a shortage of workers exists in the building trades and in agriculture, according to Vice-Consul Berglund. Recovery from the economic depression has been steady and rapid, and a cash market for home conveniences is gaining strength every day.

Coupled with the bright future for electric refrigeration is the country's excellently developed power system, supplied by abundant natural water-power sources. Scarcely a town or village exists in Sweden which does not have a majority of wired homes, besides gas mains. Distance from power lines is not a factor in selling the Swedish market.

Home construction and building of apartment houses has progressed favorably during the past several years. Cooperative apartments and new urban home developments offer a fertile field for selling electric refrigeration in Sweden, and behind that is the essential desire for the service that electric refrigeration offers.

Thus far, according to Mr. Berglund, Sweden's system of cooperatives has not started building electric refrigerators of its own on a large scale. No doubt if the cooperatives do go into the refrigeration business for themselves, the American industry will be challenged, but at the present time booming exports indicate a progressively better market for at least the next several years.



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Argentine Consul Sees Good Market for Refrigeration Products, but Little Demand for Air Conditioning

By Al. Jones

General business and industrial conditions in Argentina have been steadily improving since the worst of the depression passed in 1932, according to Samuel Fitzpatrick, vice consul for the Argentine Republic in the Michigan territory and export manager of the Federal Motor Truck Co., Detroit.

Having lived in Argentina for a number of years, and having kept in constant touch with the various activities in that country, Fitzpatrick is in a position to speak with authority on Argentina's state of affairs.

Argentina, known as "the pantry of the world," has been the leading export nation of the South American Continent for the past three decades, its principal products being grains and meats. Since the repeal of the 18th Amendment in the United States, Argentina's exports of barley and other produce used in the making of beer and liquors have increased considerably.

Admitting that it seems strange considering that there are so many meat packers in the United States Fitzpatrick says that corned beef is sold to the United States by Argentina in large shipments. Other packed and prepared meats are exported from the South American nation to the United States.

Climate Moderate

As to refrigeration and air conditioning in Argentina, Fitzpatrick contends that there is little demand for the latter on the part of the native population. In Buenos Aires, capital city of the republic in which lives almost a fifth of the entire population of over 11,500,000, and in the country surrounding it the climate is so moderate all year round that there is no need of air conditioning as it is offered today.

Electric refrigeration is wanted, and such American companies as Kelvinator, Frigidaire, Universal Cooler, and others have established plants in Argentina. Electric refrigerators, as well as many other household electric appliances, are now manufactured and assembled by both foreign and local companies in Argentina.

Manufacturing is still in its infancy in Argentina, due partly to the lack of interest on the part of the people, who prefer farmwork to factory work, and partly to the recalcitrance with which industrialists have ventured to build factories and chance the uncertainty of the market.

British Far Ahead

As it is, British concerns have been far in advance of American companies in the matter of pioneering industry in Argentina. Consequently, British manufacturers have gained considerable control of the Argentine markets for their goods. Of late, however, American interests have been expanding with less timidity. A few of the larger automobile companies have set up branch factories and assembly plants in the country, particularly in and around Buenos Aires.

In 1935, Argentina was one of the world's largest markets for iron and steel products, and this indicates the expansion of industry in the country.

As much as 80% of the commercial turnover of the country in recent years has been internal trade. Argentina's main export has been, and no doubt will continue to be for a number of years, wheat. The vast pampas of the interior, like the great plains of America's midwest, are excellent wheat-growing regions.

Radio Enjoying Boom

The radio industry is enjoying a boom period in Argentina at present. All the cabinets, almost all of the transformers, more than three-fourths of the loudspeakers, half the condensers, and lesser proportions of other parts of household receiving sets are now manufactured in Argentina.

As regards air conditioning, it is Fitzpatrick's belief that the apparatus as made at present is not suitable for the Argentine people. It is quite probable that some new form of air conditioning as yet not developed will catch their fancy, but until that time air conditioning probably will make but little progress in Argentina.

Reports compiled by the Bureau of Foreign and Domestic Commerce for the first nine months of this year, 1936, indicate that the exports of air-conditioning equipment from the United States to Argentina are of appreciable value. Up to and including September, a total value of $84,901 was represented by the sales to Argentina.

In January, the value of export was only $276, but in February the total leaped to $51,216. This unusual spurt was short-lived, for in March the value dropped to $10,968. April saw a slight increase to $11,356, but in May there came a slump. Exports for that month were valued at $862, and a further decline to $660 came in June. July's export value quadrupled that of June, the total being $2,646.

However, exports for August dropped to $708. In September, the export value of air-conditioning equipment from United States to Argentina was up again to $6,169.

The Bureau's statistics concerning the exports of refrigerating equipment to Argentina trace the trend from 1929 to 1935.

Trend from 1929 to 1935

During 1929, exports for American companies to Argentina of refrigerating equipment, household and commercial, having a capacity of not more than a quarter of a ton were valued at $388,239. The value of exports of equipment having a capacity of from a quarter of a ton to a ton was $55,167, that of equipment ranging in capacity from one to 10 tons was $110,885, and that of equipment of a capacity in excess of 10 tons was $15,289.

Household refrigerators having a total value of $84,875 were exported in 1932. In that same year, the respective values of exports of equipment having capacities of less than a ton, of from one to 10 tons, and of more than 10 tons were $275, $3,042, and $47,444.

In 1933, the value of household refrigerators exported from United States to Argentina was $203,471, that of commercial refrigerators up to one ton capacity $52,711, and that of refrigerator parts $162,241.

There was a decrease in the value of exports of all three products in 1934. That of household refrigerators dropped to $144,810, that of commercial up to one ton fell to $43,254, and that of parts to $123,928.

Value Rose in 1935

The year 1935 saw the export value rise again, and that of commercial units surpassed the 1933 figure. Household refrigerator exports reached the value of $189,890, the commercial machines' value climbed to $61,581, and the value of parts exported was $142,698.

A bulletin prepared by the Finance Division of the U. S. Department of Commerce and published Aug. 1, 1935, states that the Argentine Republic has been operating an exchange control. Under this system the Argentine Government has been granting exchange permits for the importation of foreign products on a ratio approximately equal to the value of exports to such foreign countries of Argentine goods.

Thus, in 1934, official exchange permits amounting to about $65,000,000 for imports from U. S. were granted by the Argentine Government in accordance with the approximate $70,000,000 worth of goods exported from Argentina to the United States.

In the first three months of 1935 there was a marked increase in U. S. imports from Argentina, but there was no corresponding increase in the value of exchange permits granted to Argentine importers.

Exchange permits for imports from American manufacturers are usually for necessary products not available from other countries, particularly Great Britain and the Netherlands.

Refrigerator Introduced Successfully to East Africa

LOURENCO MARQUES, Portuguese East Africa—Electric refrigerators have been successfully introduced into the East African market, according to U. S. Consul S. G. Ebling, and almost every American make is represented among the 175 units imported annually.

During the calendar year of 1934, the imports into Portuguese East Africa of all types of refrigerators (both electric and ice-storage) amounted in value to $29,131, the United States furnishing 61% of this total.

Only about 18,000 of the 4,000,000 inhabitants of Portuguese East Africa are Europeans, the remainder being natives. The low standard of living, the small earning power of these natives, and the comparatively small proportion of European inhabitants form a decided obstacle to refrigerator sales in this territory, states Mr. Ebling.

Due to the abundant supply of native labor, every household has a staff of from three to six servants. As a result, labor-saving devices are not in demand, and considerable difficulty has been experienced in training native servants in the care and maintenance of mechanical household equipment. This is another factor impending the rise of refrigerator imports here.

Artificial Trade Barriers Bring Notable Decreases in U.S. Sales to Germany, Reducing Exports to Barter Level

* * *

Artificial trade barriers are responsible for a large part of the notable decrease in the value of exports from the United States to Germany in the past two years.

Raising of tariffs, limiting imports into the country to essential raw materials and semi-manufactured products, requiring German merchants to obtain government permits for foreign trade, and the government's policy of limiting to a minimum the amount of German money that may pass beyond the country's borders have all been factors causing the falling-off of exports.

Particularly noticeable has been the drop in the value of exports of domestic and commercial electric refrigerators from American manufacturers to German consumers. Contrasted with the sharp decline of the export value of these two products is the gradual, slight decline of the value of refrigerator parts exports.

Statistics furnished by the Bureau of Foreign and Domestic Commerce trace the trend in the export values of refrigerating equipment sold by American manufacturers to German importers since 1929.

* * *

It can be seen from this table that from a volume of $1,000,000 in 1929, refrigerator exports dropped to $62,000 in 1932—a decline of approximately 94%. Then they built up to over $100,000 in the next two years only to plunge down to $16,600 in the following year. The value of the exports of refrigerators to Germany in 1935 was a mere 1.5% of that of 1929.

The exports of air-conditioning equipment, though negligible in value, have been increasing during 1936. According to figures published by the United States Bureau of Foreign and Domestic Commerce, the value of exports of air-conditioning equipment to Germany from the United States this year was $38 in February, $137 in April, and $325 in June.

From the office of the American consul in Stuttgart comes a report published by the Bureau of Foreign and Domestic Commerce stating that construction in Germany was on the increase during May and June of this year. In cities of over 50,000 population there were 9,713 houses built in May, and 12,020 in June. In comparison with the same months of 1935, building permits granted by German cities of medium and large proportions had increased 57.5%, and the number of buildings put into construction was 64.4% greater.

Since the "New Plan" of Germany went into effect in September, 1934, practically the only method of trade by which most classes of commodities can be exported from the United States with assurance of payment is the old, simple, but inefficient practice of barter.

A classic example of this form of trade in modern times was the acceptance by the Standard Oil Co. of New Jersey of a cargo of harmonicas as payment for a shipment of its products.

Type of Equipment	1929	Value in American Dollars 1932	1933	1934	1935
Capacity up to ¼ ton*	997,228	....	....	....	....
Capacity of ¼-1 ton	32,828	....	....	....	....
Capacity of 1-10 tons	7,380	61	....	....	....
(Note: Classification changed by government for 1932-35.)					
Domestic refrigerators	....	62,223	44,036	96,130	7,352
Commercial (up to 1-ton cap.)	....	....	31,640	12,769	9,248
Refrigerator parts	....	....	126,426	130,410	112,817
Totals (exclusive of parts)	**1,037,436**	**62,284**	**75,676**	**108,899**	**16,600**

*Both commercial and domestic.

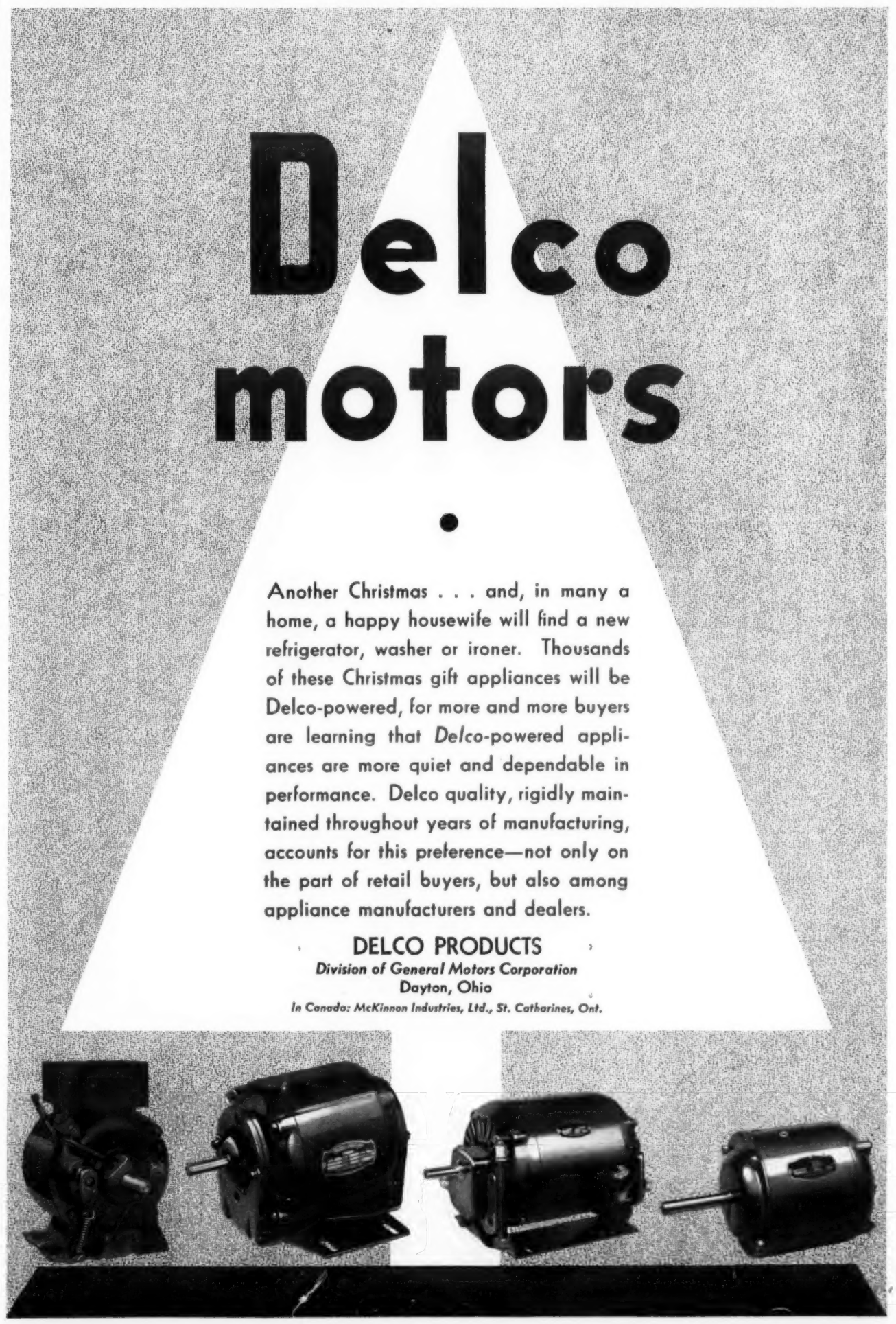
Australian Hopes for Trade Agreement

CHICAGO—The hope that a trade agreement might be reached by United States and Australia which would permit free interchange of goods between the two countries was expressed by Frank Goldberg, head of the Australian advertising agency of that name, during a visit here on his way home from a trip to Great Britain.

The new tariff and quota policy adopted by Australia has banned import from the United States of products manufactured in Australia, and has restricted importations of other American goods.

If a reciprocal trade agreement is worked out between the two countries, Amercian manufacturers will again be able to take advantage of Australian marketing opportunities.

Because of the popularity of automobiles and other American products in Australia and New Zealand, Mr. Goldberg believes it should be possible to work out a mutually advantageous trade agreement, perhaps through a conference between official representatives of the two countries.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Export Markets

INFORMATION gained by the editor on his recent seven months' trip around the world, plus interviews by staff members with 17 consuls representing foreign countries with which the American electric refrigeration and air-conditioning industries carry on a $10,000,000 annual export trade, reveal the following significant facts and trends:

(1) The world market for household units, commercial equipment, refrigeration parts, and air conditioning is definitely improving. Incomplete export figures for this year show marked gains in all divisions.

(2) The Union of South Africa, the United Kingdom, and France are our best customers, in that order.

Use of American-Made Parts Increasing

(3) The parts market—which has almost doubled between 1933 and 1935—indicates that although exports of complete units have fallen off to Germany, Italy, and a few smaller countries, these nations are buying American-made refrigeration parts in sizable quantities.

(4) Broadly speaking, the export market is where the home market was 10 years ago—in its formative stages, with a huge potential looming up.

(5) Although countries like Germany, France, and Italy are manufacturing more equipment in local factories, under pressure of nationalistic "buy at home" movements, there is little to indicate that the American industry need fear foreign competition. Neither foreign production facilities nor foreign products can match those from the United States.

(6) First-hand information secured from consuls who have observed the market in their respective countries during recent months shows that *price* is the biggest barrier to purchases of American refrigeration in foreign countries. All consuls interviewed expressed the opinion that reciprocity trade agreements concluded or underway will eliminate much of the tariff and duty trouble that is boosting foreign prices beyond reach of the average buyer.

(7) Various consuls set base prices of $75 to $100 on small household models as a prerequisite to high volume. On his trip the editor learned that stiffest competition for American household refrigerators comes from low-priced foreign boxes of 1 to 3 cu. ft. capacity.

Refrigeration Education Still Required

(8) *Refrigeration education* is still needed in almost every foreign country. It has been suggested that American export organizations devote more time to cooperative promotion of the idea and benefits of the product, rather than the excellence of an individual make; and that considerable promotional effort may be needed to interest the most active merchandising organizations abroad in taking franchises for refrigeration and air-conditioning products.

(9) New and specialized sales techniques should be developed to fit specific foreign markets. Latin American consuls insist that house-to-house canvasses, direct mail approach, and home demonstrations are either useless or ineffective, although the editor found that modifications of the specialty selling technique have worked well in individual instances all over the world.

(10) The American tourist trade is contributing materially to the foreign demand for refrigeration and air conditioning. Hotels, ships, restaurants, theaters, etc. must supply equipment for the comfort of their guests or passengers; and American "fussiness" about food makes adequate refrigeration essential.

Air Conditioning Market Untouched

(11) The air-conditioning market abroad is practically untouched. Prices are almost prohibitive except for industrial uses. In the tropics, however, manufacturers will find a prodigious market in the near future.

(12) Foreign peoples want modern, useful conveniences, and will buy them—*if* they are within their means and *if* they are convinced of the need for the product. The notion that only Americans are interested in something new is fictitious.

(13) Most countries recognize the American product as superior in performance and materials to their own, but some are making strenuous efforts to develop home products to compete with American-built equipment. This is especially true in Europe.

(14) The foreign exchange and currency pictures are improving. Stabilization is on the upgrade, and new trade agreements between the United States and other nations will probably help to cut prices through duty reductions. An export boom is in sight.

(15) The export market, taken as an entity, is still far from being developed to its proper standard, and the future depends partly on American companies perfecting their export organizations, and improving their connections abroad, and partly upon the serious realization of American manufacturers of the importance of the foreign market, and of the necessity to give it special attention.

Foreign Trade

WITH the President of the United States now in South America in the interests of binding together the nations of the Western Hemisphere for peace and prosperity, the attention of all good citizens is now focused on the highly intriguing possibility of averting the dreaded catastrophe of another war through the removal of barriers to trade.

The wave of nationalism which swept over Europe after the World War, and which has been creeping over the rest of the world higher and higher, seemed to be moving all nations toward two inevitable objectives: bankruptcy and suicide. As trade restrictions multiplied, the depression deepened, hatreds grew, and war approached. Restrictions were answered with retaliations, and the ball gathered momentum as it rolled toward impending doom and destruction.

Currency Stabilization and Then Trade Agreements

Recently, however, there have been hopeful signs of a reversal of the trend. First came negotiations between a few governments leading toward currency stabilization, and away from the monetary wars which have marked the economic history of the last decade. Then came overtures for trade agreements which might again open the gates for mutual exchange of goods and services. And now arrives a great revival of public interest in foreign trade.

Although many competent observers still maintain that a terrible war is unavertable, a number of optimistic forecasters see in this apparent growth of willingness to exchange the hope of national self-sufficiency for the reality of prosperity through greater freedom of commerce, hopes for future peace and security. In this movement the United States of America is leading.

And while we're at it, we're also making ourselves richer.

Foreign Trade Has Always Been Important

Foreign trade has always been an important factor in the economic well-being of the United States. The same features of our economy which have contributed to our unexampled industrial growth have rendered the continuation of international intercourse essential to our prosperity.

Just as wide markets have made the division of labor and the use of machinery possible, the division of labor and the use of machinery have made wide markets necessary. Because of this fact we find it profitable to concentrate upon those goods in the production of which we possess a relative advantage and to import chiefly those which may be more economically produced in foreign countries.

Since all our industrial growth has taken place in contemplation of this fundamental principle of comparative production advantage, anything that disturbs the flow of our trade to and from foreign countries affects our economy adversely. Although the original impact of a disturbance may affect some industries more directly than others, unbalancing vibrations are transmitted through curtailed production, unemployment, reduced profits and purchasing power, so that many industries invariably become involved.

In 1935 we exported $2,282,000,000 worth of merchandise. Of United States merchandise exported, 30% consisted of crude materials which we can produce cheaper in large quantities than can other countries. Another 60% of our exports consisted of semi- and finished manufactures in which were embodied the economies of our large scale machine production.

Closely Related to Domestic Commerce

Because foreign .trade involves the exchange of merchandise across political boundaries and is consequently influenced by tariffs, exchange fluctuations and political policies, there is always a strong tendency to regard foreign trade as peculiarly removed from domestic trade. This view often overemphasizes the difference between the two types of transactions and minimizes the great number of influences which affect both forms of trade simultaneously.

Foreign and domestic commerce are closely interrelated parts of a complicated whole. Both have traversed the same general course throughout our history. They expand and contract with a remarkable sympathy. Both reached a peak in 1929 and both declined to a low in 1932. Both have been improving since that year.

Early figures on the trade in 1936 presage a continuation of the upward trend. Exports in the first quarter have been approximately 10% larger in value than in the first quarter of 1935. Imports in the first quarter of 1936 have exceeded those of the corresponding period of 1935 by approximately 15%. Although still far below the peak year 1929 in terms of value, exports in the first quarter of this year have been 74% larger and imports 112% larger than in the low first quarter of 1933.

A highly developed industrialism, in the United States as elsewhere, requires markets which transcend political boundaries and reach to all corners of the world. The urge for greater efficiency and lower cost of production leads to specialization, which in turn demands broad markets if maximum benefits are to follow. For some commodities nothing short of a world market justifies specialization and mass production with their accompanying economies.

U. S. Changes from Debtor To Creditor Nation

During the past two decades, the United States has drastically altered its international commercial and financial position, in that it has become a great creditor nation instead of a debtor country, as formerly. Creditor countries, obviously, must be ready and willing to accept the logical consequences of that creditor position —consequences which, when rightly viewed, are seen to be as *beneficial* as they are inescapable.

If a creditor country expects to continue to export merchandise in large volume and receive interest and repayment of principal on its loans—it must be prepared to take payment in goods or services when necessary. That inevitably means an increase in imports.

The United States is favorably situated to embark upon the rational and advantageous policy of encouraging reciprocal trade. Our international trade position puts no compulsion upon us to restrict our foreign trade. Our exports are still considerably higher than our imports although both together have descended to a relatively low level. There is no danger, therefore, that we may be short of the necessary foreign exchange to pay for imports, with attendant reduction in our monetary reserves.

Many *other* countries that have trade barriers have erected these because they cannot find means to pay for their imports. Our tariff barrier was established because of an apparent unwillingness to take payment in the only ways in which it is feasible for foreign debtors to make such payment to us.

Any person having merely a casual acquaintance with the thorny difficulties involved in international "transfer problems" knows that foreigners cannot pay indefinitely for their purchases of American commodities by actual physical shipments of gold to cover any substantial part of the amounts due. Any such attempt is impracticable, and would be disruptive in effect.

Scientific Selection of Imported Products

If, then, we accept the desirability of receiving our imports from abroad, there are two principal factors that need to be considered. The first is the need of following the principle of scientific selection in controlling the character of our import trade. The second has to do with the extent to which foreign investments and tourist expenditures may be substituted for commodity imports.

As regards the selection of our imports, it is proper to place first emphasis on the goods that we need as raw materials, as, for example, rubber, silk, and certain minerals. A second classification about which there should be little dispute consists of important foodstuffs such as coffee, tea, sugar, and certain tropical fruits. Beyond these two classifications, the acceptability of foreign products depends upon the extent to which they are competitive with American-made goods.

If, in certain lines, our own products are entirely adequate and properly priced, the presumption is in favor of retaining tariff protection—the degree of protection, of course, being conditioned upon many factors.

Economic 'Needs' Are Changing Constantly

The so-called economic "needs" of a country cannot justly be considered as absolute and fixed. They are, on the contrary, relative and continually changing—ever moving upward from the most basic wants to those which lie in the upper levels of human desire. In a country which is truly prosperous and in which popular incomes are above subsistence levels, the *needs* of individuals become more and more those having to do with comforts and tastes which, if viewed from a lower stratum of economic well-being, might appear to represent extravagant luxury.

Our import policy may be qualified, secondly, by our foreign-investment policy. The first result of foreign loans is to increase exports, but the secondary result, if the lending country is to receive interest and payment of principal, is an increase of imports of either goods or services.

The problems of international trade are complicated and involved. But in their solution rests a basis for the renewed prosperity of the world, and a hope for the preservation of peace.

READERS' LETTERS EXPLAIN TRADE PROBLEMS ABROAD

1st Air-Conditioned Train Completed In Italy

Giacomo Jucker S. A.
Milano

The outstanding of refrigeration systems in Italy has already entirely laid upon local manufacturing.

The pushing-resort to this result has undoubtedly been a desire of emancipation and far long the difficulties established in international trade relations; as so much as our Government has greatly helped national industry on getting rid of foreign dependence.

It is however an honor for us to state that local manufacturing, as well for home and commercial systems, may be without fear compared with any system the other Nations, particularly America, are bringing out.

Naturally, as manufactured unities are less than otherwhere, we are not allowed to put them on market at the same prices we would do them, if imported f.i.; from your land.

Little, on the contrary, has been till now realized for air conditioning, somehow this new problem is fitting on customers mind, and already caused some requiries to manufacturers.

On that branch, Italian firms are better working on systems on foreign firms patents, likely American firms, as the most aware in this kind experiences.

We think, therefore, on next season two many unities will be placed in Italy as last one and we shall have also some air-conditioning systems put on, expecially on buildings of public appliance (hospitals and schools).

We let you know that first air-conditioned trains have been introduced on Italian railways.

We think our firm has settled an important duty to regard of national industry: to have anyhow supplied the whole accessories and planning is needed for the automatic work of the systems.

Our firm is the unique one organized for the sale of all American Firms organization, as: Melchior, Armstrong, Dessau & Co., of New York—Borg Warner—Harry Alter—Perfection—we keep, at that purpose, the whole stock on require and some technical agents at disposition, ables to help and advise customers on ther choices for different engine types.

Far more we keep ourselves aware of the news showing on that branch on European markets, and on the American one particularly.

The difficulties on trade international relations has not forbidden us to buy a lot of engines and we would therefore be very obliged to you, if you could, by means of your Review, keep us *directly* relied with other firms manufacturing set engines for refrigeration systems.

ING. MARZORATI

Da Costa Plans to Make South American Market Survey

Frank da Costa
Electrical and Refrigeration Engineer
La Grita, Tachira, Venezuela

Editor:

Your letter of Oct. 16 reached me out on location just two days ago.

I wish to express to you my sincere thanks for the opportunity of contributing to your Foreign Trade Number, I regret however that this will not be possible for two reasons, first, lack of time, and second that right here in this territory refrigeration, electrical or otherwise, is an unknown quantity, due no doubt to the climate and to the remoteness from 20th Century civilization.

This region is populated by a series of small towns nested on elevated plateaux of the Venezuelan Andes Mountains ranging from 1,200 to 3,200 meters above sea level, reached from the outside world after motoring for hours on end on narrow, curvy, winding and twisting mountain roads ascending to formidable elevations only to descend again a few turns ahead, until you finally reach your destination.

On the first trip it is novel and enchanting, one's camera shutter is kept in one continuous click, but after doing these trip several times it is all terrible, turn after turn is passed and you seem to be getting nowhere, to say nothing for an occasional finale of 10 to 15 miles on mule back to get you to your location. The excellent remuneration received is what makes one stick.

I was getting ready to start on my vacation when the Foreign Trade Number was announced, it occured to me that the readers of the NEWS would welcome some information about refrigeration in Colombia, Venezuela and Caribbean Territory; I decided to get your opinion of the idea, was all set, letter written and all; when there stepped in a new contract which will keep me busy for a few weeks yet.

Just as soon, however, as I get this off my hands, I will be going off for my vacation which I intend to spend touring the territory above-mentioned getting the inside story of electric refrigeration and its future possibilities in these tropical countries, preparatory to returning to the refrigeration industry which is my specialty.

I have found the NEWS so handy and useful, and have got so much out of it, that I feel it an obligation to share the information obtainable on such a tour, with the readers of the NEWS, and is with this in mind that I offer this small but spontaneous and voluntary contribution to some future issue.

Drop me a line telling me what you think of the idea, any hints or advise you may offer would certainly be deeply appreciated. Shall I hear from you?

FRANK DA COSTA

Goulet Describes Setup for Servicing Westinghouse Refrigerators in Use In Panama Canal Zone

Commissary Division
The Panama Railroad
Operating Chain Stores in the Canal Zone
Cristobal, Canal Zone

Editor:

This will acknowledge your letter of Oct. 17 and we are glad to tell you that your "Around the World" series was read with interest here, and as a matter of fact, we made a point of investigating further the possibility of reconditioning Westinghouse units in the field, as you stated was being done by the Palestine distributor, instead of having to return them to the factory.

Set-Up an Unusual One

We believe you will find our set-up an unusual one and hardly corresponding to that of any other electric refrigeration distributor. The Commissary Division of the Panama Railroad Co. consists of eleven retail stores, large warehouses, including a cold storage warehouse, a number of manufacturing plants, including such varied activities as the manufacture of soap, bread, ice cream, sausage products, soda waters, the roasting and packing of coffee, etc.

We operate as a United States Government unit under the supervision of the Supply Department, The Panama Canal, for the purpose of supplying all Panama Canal and Panama Railroad employes, and Army and Navy personnel located here, and, of course, the supplying of ships transiting the Canal or visiting Canal ports. It is obvious, therefore, that the handling of electric refrigerators is only incidental with us.

Several years ago we selected the Westinghouse line as best meeting our requirements and we now stock that line on a distributorship basis. We will, however, handle for our customers a special order for any other make of refrigerator.

Our market is definitely restricted to employes of the Panama Canal, Panama Railroad and to members of the Army and Navy, and sales, of course, are confined to the Canal Zone only. We have no connection in any way with merchandising activities in the Republic of Panama.

No Restrictions or Duties

There are no restrictions on our imports nor is there any duty on electric refrigerators into the Canal Zone. We do not maintain any refrigerator sales force as our eleven stores at the principal Canal Zone towns act as selling units.

We are fortunately situated as regards the service problem, for we have our own shops, and incidental to our larger refrigerating problems in connection with our cold storage and ice manufacturing plants, we have a staff of trained mechanics under the supervision of E. S. Parks, our mechanical supervisor.

We have two specially trained household refrigerator service men, one at each of the Canal terminal cities, and we provide 24-hour service. In addition, we offer regular inspection service at a flat rate, under which plan a customer's refrigerator is inspected twice a year, minor adjustments made, and cleaning and oiling attended to.

Excess Humidity Problem

The principal problem encountered here has been excessive condensation resulting from the hot, humid climate. Westinghouse engineers in collaboration with our own engineers devised special cabinet construction involving certain differences in insulation from the usual cabinets, and the efficiency of the boxes has been increased to a point where insulation troubles appear to be a thing of the past.

As to the other businesses we are conducting, the stores and warehouses referred to above are for the purpose of merchandising hardware, dry goods, shoes, tobacco and candy, groceries, meats, vegetables, fruits, etc., to the Government employes here and the refrigerator line is handled as part of our hardware department activities.

The operations are under the supervision of the undersigned as general manager.

Like News the Best

We like the NEWS very much and consider it a valuable adjunct to our refrigerating activities. With our many other activities it is necessary for us to take a total of 49 different trade journals, and the NEWS is high on the list of those that are carefully read and put to immediate advantage on receipt.

A. W. GOULET.

New Temprite Demonstrator Proves Startling Sales Closer

FACTS talk convincingly—claims are merely words until proven by facts.

Temprite has just introduced a new self-contained Portable Demonstrator which proves by facts the unbeatable claims of Temprite performance.

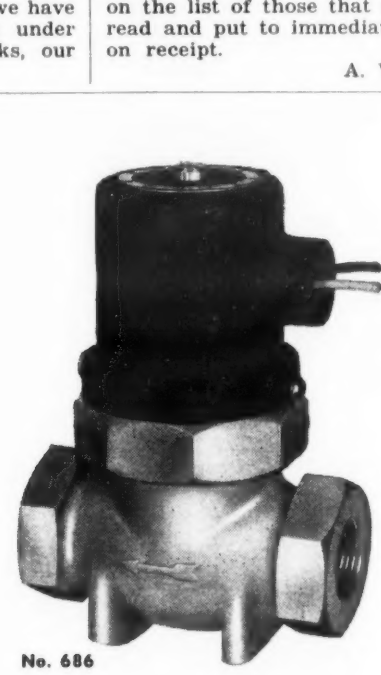
Thousands of beer dispensers may have heard the Temprite Story but cannot believe that the many advantages offered by Temprite are actually possible.

Get a Temprite Portable Demonstrator—it will serve beer in any tavern owner's premises and dramatically prove its claims. Its performance eliminates competition and gets you the beer business.

Write for our proposition.

TEMPRITE PRODUCTS CORPORATION
1349 EAST MILWAUKEE AVE. - DETROIT, MICHIGAN
ORIGINATORS OF INSTANTANEOUS LIQUID COOLING DEVICES

Announcing
NEW and IMPROVED
SOLENOID VALVES


No. 686

No. 683-R3

No. 683 W-2

THE "Genuine Detroit" No. 686 is a new large capacity Solenoid. The new features of this valve together with the improvements in the 683 R-3, and the 683 W-2, were made on the basis of many years' experience with Solenoids.

These units are perfectly quiet in operation—no A C hum and no rattle. They have greater lifting power and higher capacity. They are far more durable. Built especially for refrigeration and air conditioning. These units are controlled by temperature or pressure controls or by room thermostat.

Needle and seat are made of a special high wear resistant alloy which is both non-corrosive and non-magnetic. Being non-magnetic these elements do not attract minute metal particles which would otherwise interfere with tight closure.

The valve bodies of all these units are made from No. 11 special body brass which is non-porous and which has been used extensively with refrigerants. A heavy kick-off spring in conjunction with the special needle and seat construction, eliminates any tendency of the valve to stick.

Write for descriptive matter on these units and their application in air conditioning and refrigeration work.

DETROIT LUBRICATOR COMPANY DETROIT, MICH., U. S. A.
5900 Trumbull Avenue
NEW YORK, N. Y.—40 West 40th St. • CHICAGO, ILL.—816 S. Michigan Ave.
LOS ANGELES, CALIF.—320 Crocker St.
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
Canadian Representative—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

Parts Business of Cuba's Only Service Company Grows from $100 Monthly In 1934 to $400 This Year

Servicio General de Refrigeracion
Havana, Cuba

Editor:

We are very glad that you have offered us the opportunity to appear in the editorial columns of REFRIGERATION NEWS, special number devoted to Foreign Trade, Dec. 2, 1936.

Due to the rush in which you are soliciting this information relative to the refrigeration business in the Republic of Cuba and to the large amount of work that we have on hand, although we are now in November, it is practically impossible for us to render you a complete and interesting information in regards to the refrigeration business and its future in Cuba.

Our business was started June 1933, two months after (August) there was a revolution in Cuba. From that date on, our economical crisis was more critical than before, although we were feeling it since 1930.

Our business started as a service station. We have to give special attention to the sale of refrigeration parts and accessories, and we expect that for the coming year of 1937, the sale of accessories is going to be the largest and most important part of our organization and in order to take care of it, we are going to move to a new building where we are going to use 50% of the floor to our stock of refrigeration parts and accessories.

While our business suffered due to the economical conditions in Cuba, on March 1934, business was getting better every day and refrigeration was the one which, in our opinion, obtained the best results.

After the change of Machado's government, we had several other provisional governments until May 20, 1936, when the first constitutional government took place and we are actually represented by Dr. Miguel Mariano Gomez, our president.

The nature of our market, in our opinion, is the best, if you take into consideration the fact that eight months of the year, the temperature is between 80 and 86° F. and during December, January, February and March, it is between 68 and 76° F. Besides, the humidity is high all year.

Another fact is that Cuban peoples are lovers of comfort and they are rapidly interested in the advantage offered by refrigeration.

The year of 1936 is, in our opinion, the best in Cuba in refrigeration sales, compared with the last six. As to air conditioning we could also assure you that this is the best year of sales in Cuba. This year several private offices have been equipped, also the down floor of a bank, which is using a 20-hp. unit.

Now there is an installation in a Theatre of Westinghouse equipment, four condensing units of 25 hp. each and 12 evaporators with a total capacity of 100 hp.

To give you an idea of our refrigeration parts business, we only wish to point out that during 1934 we purchased from United States around $100 monthly, while during 1936, our purchases are over $400 monthly. A part of our purchases are made through Melchior, Armstrong, Dessau Co. of New York City, who have been helping us considerably.

Our business could not be considered by the amount of our sales due to the fact that 75% of our personnel is used for the installation and service of Westinghouse commercial equipments with whom we have a contract for this purpose.

In Cuba there are no restrictions for the imports of American manufactured products.

On domestic equipment the only difficulty for the buyer is the fact that our electricity rate is too high and while reduced, it is still high.

On commercial equipments, the great difficulty is the fact that our public has been taught to buy special made equipments, which makes the cost of the units too high and hard to adapt the refrigeration apparatus.

The best selling argument is to demonstrate the buyer that there are owners of refrigeration equipment who are satisfied with their equipments and the good service rendered.

The service problems that we are facing in our business is the lack of a Master Part Catalog, where we may find listed the compressor models and the parts that they are using so that we could maintain certain number of pieces in our stock for Frigidaire, Kelvinator, Copeland, Servel, Lipman, General Electric and Westinghouse. The other makes are not largely distributed in our market.

There is another general problem due to the figure of our Island, as it is long and narrow with a Central highway which is near 1,000 kilometers long. This fact makes the transportation cost too high as we are unable to have a center to attend the service quick.

In Cuba could be sold a domestic refrigerator which is equipped with water service as original equipment.

Our woods are good and we could build long life refrigerators as it could not be harmed by rats, ants, humidity, sun and others insects.

The personnel of our organization is formed as follows: C. Riumbau, service manager and partner; R. Calafell, accountant; M. Perez, shop manager; A. Sanchez, storekeeper; A. Alvarez, general and selling manager.

In the whole Island, we are the only ones devoted to the sale and distribution of refrigeration parts and accessories. We have in our services, two trucks and an automobile.

The REFRIGERATION NEWS magazine is to our business something that we could not be devoid of, due to its valuable information and it is also our salvation source, where we always go whenever we need some information for the good service of our business.

A. ALVAREZ,
Manager

THE ANSUL TWINS
KNOW THE ANSWER TO YOUR REFRIGERATION PROBLEMS
SULPHUR DIOXIDE
METHYL CHLORIDE
ANSUL CHEMICAL COMPANY
MARINETTE » » » » » WISCONSIN

G-E Dealer Tells How Refrigeration Has Changed Customs

General Electric Co. of Cuba
Edificio la Metropolitana
Havana, Cuba
Oct. 22, 1936

Editor:

I have been a subscriber to REFRIGERATION NEWS since its first issue. It is interesting and instructive. It keeps one up to date with the goings on in the United States in the question of domestic refrigeration and air conditioning. Even its advertising pages are valuable to men like myself, working in this line of business outside of the United States.

I offer you the following comments on the refrigeration field in Cuba. I shall not be offended if you revise it, cut it or omit it entirely.

The domestic electric refrigerator has been sold in Cuba over the past twelve years. The demand has gradually increased as the customs of the people change to include refrigerating service in their house as a convenience or as a necessity.

After centuries of living in Cuba without refrigeration of any kind, the customs of the country have been well established to the utilization of fresh food at all times. No food cooked in one day in the home was ever served on the second day and all meats were purchased on the day during which they were to be consumed. Ovens were seldom used and the taste had been developed, therefore, for fried food or food cooked in earthenware containers.

Even cold water was frowned upon by a large majority of the people.

The customs, therefore, had gradually to be changed and the taste of the people had to be developed for cold cuts and food that had been refrigerated.

The economy in the preservation of food has aided in making this change and it may be stated that in the past twelve years the customs have changed to the point where every one in Cuba today wishes cold water to drink and would appreciate the convenience of a refrigerator in their home.

The market has, therefore changed so completely that sales today is a matter of contact, and are limited principally by low general purchasing power and by low earning power on the part of the public.

It may, therefore, be concluded that the future sales of refrigerators in Cuba will depend:

a) on the general prosperity of the country;

b) on the extent of the distribution of this prosperity;

c) on the percentage saturation of the market; and,

d) on a general maintenance of retail prices to give dealers and distributors sufficient margin to make their business profitable and justify sales and service efforts and expense.

Air conditioning is only beginning to find popularity. Its popularity will undoubtly increase but will never reach the same level that is justified in the North and Central West.

Reasons for this are the typical construction of the the buildings, lack of water for cooling purposes, comfortable average temperature throughout the summer and low maximum indoor temperature during summer, comparatively low property value, low rental value and small value in annual retail sales per square foot of floor space occupied.

Small commercial refrigeration for meat markets, restaurants, grocery stores, soft drink and ice-cream installations, etc. has a considerable field, but again the large number of these establishments per capita and the corresponding small annual sales of each, limits the allowable operating and carrying charge to small, cheap and inadequate installations, making this field less attractive than general conditions would indicate that it should be.

The new electric rates now in effect favor some further development along all refrigeration lines.

M. T. McGOVERN,
President

Guatemalan Markets for Air Conditioning Small

GUATEMALA, Guatemala—A very small market for air-conditioning equipment exists in this region, as temperature ranges from 53° to 92° F. in the highlands and from 60° to 98° F. in the lowlands, the extreme heat lasting only for brief periods, according to U. S. Consul R. D. Wells.

Manchurian State Bldgs. Being Air Conditioned

MUKDEN, Manchuria — Air-conditioning equipment, principally of Japanese manufacture, is being increasingly imported into Manchuria for use in state buildings, according to U. S. Consul W. R. Langdon.

How They Display Them in Cuba

This display window of the Independent Electric Co. in Havana, Cuba, is exemplary of the adaptation of U. S. manufacturers advertising and promotion methods.

* * *

Cuban Housewife and Merchant Very Conscious of Modern Refrigeration's Advantages, Says Frigidaire Dealer

Frigidaire
Producto de la General Motors
The Independent Electric Co. of Cuba S. A.
Ave. de Italia (Antes Galiano) 42
Havana

Editor:

Cuba has been for the past nine years, and is today, an excellent market for American refrigeration products.

Just as Frigidaire was the pioneer in the Cuban domestic and commercial refrigeration markets, having sold more than 6,000 units, it is today the pioneer in the air-conditioning market.

The first successful modern air-conditioning installation in Havana, was the First National Bank of Boston, a 22-ton installation, two super-power Frigidaire 10-hp. condensing units and one self-contained conditioner.

This was followed by the Cocktail Bar at the Sevilla Biltmore Hotel, where our air-conditioning equipment is said to be responsible for the popularity of the hotel during the last tourist season. The Sevilla Cocktail Bar, is today the favorite rendezvous of the elite in Havana.

Other Frigidaire air conditioners have been installed in the Purdy & Henderson's offices, the Cia. Azucarera del Golfo S. A., the Chase National Bank of N. Y., the offices of the Sucesion de L. Falla Gutierrez.

The Cia. Cubana de Electricidad, a subsidiary of the Electric Bond and Share, has recently revised and lowered their residential rates and we expect, therefore, an increase in domestic refrigerator sales and in residential air-conditioning installations, in the territory served by the Cia. Cubana de Electricidad lines, which is practically 60% of the Island.

In the territory not served by the Cia. Cubana de Electricidad, rates are almost prohibitive and only few can enjoy the luxury of having refrigeration in their homes.

The Board of Health enforcing sanitary regulations on butcher shops and dairies, has largely contributed to the increase in commercial sales in the past two years.

Practically all commercial cabinets are built in Cuba. Native hardwoods are used, mahagony preferred. Interiors are lined with glossy white English tiles, easy to clean and keep clean.

Cuban merchants insist on good insulation—best grade Spanish corkboard, 4 inches in thickness, covered with refrigeration asphalt, is the demand.

The buyer usually pays a visit to the carpenter shop to see that he is getting his money's worth. There are a half dozen shops highly especialized in this work in Havana. The cost of a butcher's box of about 60 cubic feet in capacity, is about $225 (cabinet only).

Water rates are high and due to the scarcity of water in the larger population centers, water-cooled condensing units are not recommended. This is, indeed, a handicap to air-conditioning installations and to the sales of small self-contained conditioners for residences and offices.

Cuban housewives are wide awake to the need of good refrigeration in their homes for the preservation of perishables, and although the economy selling argument does not go so good with conditions here, they are learning to economize with the refrigerator in quantity purchases.

Health is the predominant argument with the housewife.

Safer food protection and customer attraction, the best argument in commercial refrigeration.

Frigidaire is solely distributed by the Independent Electric Co. of Cuba S. A. The Frigidaire department, is operated independently from the rest of the organization. Showroom, offices ond shops are located on Galiano 42, one of Havana's busiest thoroughfares. We have no dealers. Sales in the entire Island are made directly through our sales representatives.

Frigidaire has an enviable reputation for service in Cuba. Competent mechanics and servicemen with service stations in Havana, Colon, Santa Clara, Camaguey and Santiago, give rapid service to any place in the Island.

Leopoldo Suero is the general manager for Frigidaire in Cuba; Tomas L. Montoro, sales manager, and Julian Brennes, service and installation manager.

Our basis for domestic refrigerator sales easy payment plan, is as follows: 25% with order, balance in 12 months. Guarantee—one year. For commercial sales: 30% with order, balance in 18 months. Guarantee—one year. Time payment sales only to good risks based on credit reports.

Many of our competitors are accepting orders asking as low as 10% down, balance in 24 or 30 months, and giving long period guarantees. We do not indulge in this practice.

I have followed with interest your "Around the World" series and find the NEWS truly helpful to the refrigeration industry. T. L. MONTORO

Kelvinator Equipment Used in Australian Railways Building

SYDNEY, Australia — Kelvinator equipment is used extensively in the new government railways office building at Wynyard Station in Sydney, a fine 13-story structure in which electrical equipment is used throughout. Thirty two volt A. C. current is used.

Vegetables are kept fresh in a storage cabinet with a baked Dulux exterior and a monel metal interior, refrigerated with a Kelvinator continuous fin coil. Practically all of the equipment in the kitchen of the building is of stainless steel construction. A pastry cook's cabinet is refrigerated by Kelvinator, and cooked meat is kept cool in a Kelvinator refrigerated storage cabinet, with a capacity of 120 cu. ft. A large Kelvinator bottle storage cabinet provides room for an ample supply of bottled beverages, and another cabinet is used for the storage of ice cream.

A unique installation is found in a food storage cabinet operated by a condensing unit placed on top of the cabinet, which also refrigerates a salad pan. Butter, eggs, cream, cheese and milk are kept at their proper temperatures in a large storage cabinet, operated by Kelvinator equipment.

All installations were made by Dangar, Gedye and Co., Kelvinator dealer at Sydney, operating under the distributorship of Kelvinator, Australia, at Adelaide.

Long-Time Guarantees in U. S. and 1-Year Warranties in Mexico Are Detrimental To Business in Tampico

Ideal Motor Co., S. A.
Tampico, Tamps., Mexico

Editor:

After following you on your trip around the world, we believe there is little we could add to your very interesting and efficient reporting of the world market in refrigeration. After all, we are your next door neighbors and Mexico of the bandit era has been replaced by the modern Mexico which, although tinged with a little red, is rapidly progressing with good schools, roads and a raised standard of living.

A good many of us who have lived any length of time in Mexico, believe that it is a near-sighted policy indeed, for the United States to overlook this piece of rich territory from the Rio Grande to the Panama Canal. If famed economists' stories are true, it will not be long until the United States will be needing the unlimited natural resources of this country.

Tampico of the Boom Days

Anyone that has had anything to do with the oil business, even though remotely, has heard of Tampico, the land of oil gushers and boom times. No one thought that one dollar was too much to pay for a shine, or a buck and a half too much for a haircut, but all that was back in the early twenties and the refrigeration business was in its infancy.

Boom times and gusher wells have a bad habit of not lasting very long and Tampico was no exception. From the No. 1 oil port of the world, it has dwindled way down the list. Not that the oil is all gone, but world markets, governmental obstacles and difficulties have limited the exploration for and the exploitation of oil in this country so rich in natural resources.

Leading Mexican Port

Tampico, with a natural river harbor, is, according to the local Chamber of Commerce, the leading Mexican port on the Gulf. It lies just 110 miles off the Laredo-Mexico City highway and is connected with this highway by a dirt road that is passable in dry weather. We have excellent air transportation, Pan-American Airways having national and international planes stop over in Tampico.

Since 1932, when this Company first took over the refrigeration business from a bankrupt distributor, it has grown steadily from $10,000 a year to $50,000 a year sales. While our territory takes in the southern part of the State of Tamaulipas and the northern part of the State of Veracruz, Tampico, with approximately 40,000 population, is the only city with a 24 hour light and power service. (We could do with a little of Roosevelt's rural electrification.)

Sell Electrolux Kerosene Units

It is for this reason that our market is limited to Tampico, with the exception of a few isolated oil camps that provide their own electric power from small plants and dynamos. To gain more coverage on this outside market, we last year obtained the franchise for "Electrolux" kerosene job and are having a growing success with this refrigerator in this new market.

We are fortunate in having good ocean freight service direct from New York. The tariff on household boxes is based on weight, duties being 5⅞ cts. U. S. currency per pound up to 220 lbs. Over this weight it is reduced to 4½ cts. U. S. currency per pound. Electrical motors, commercial compressors, coils, etc. pay only 6/10 of one cent U. S. currency per pound.

It is almost prohibitive, though, to import the very large cabinets for commercial installations and so we use locally made cabinets, these being surprisingly well constructed.

Opening Commercial Market

The commercial line is newer to this market than the household line, but we are gradually opening up an extensive market. From 1932, when we sold no commercial units at all, the business has developed until this year we will sell probably 50 commercial compressors and their corresponding units. Our largest installation so far is a 5-hp. compressor.

Air conditioning is still in its infancy here. But give us another year or so. There is no greater need for air conditioning anywhere than there is here, where we have a very warm, humid summer. Winter heating, of course, is not necessary, as our winters are very mild.

Selling a Luxury

The average Mexican business man can be sold with the same story that sells in the United States, that is, from a business standpoint of saving, efficiency, etc. but in the homes we are still selling here on the same basis that was used years ago in the United States—luxury and buying something that Mrs. So-and-So does not have.

The writer recalls the recent case of a salesman who had diligently worked a certain neighborhood and was rewarded by selling several boxes. He thought he had the situation well in hand, when a prospect whom he thought was on the point of closing, bought a competitive machine, the first in that neighborhood. His story was that although he knew our machine was the better buy, he wanted something different than owned by anyone else in that neighborhood.

Sometimes we feel that the American sales psychology is working perfectly and then, out of a clear sky, something goes wrong and we must work on the prospect from an entirely different angle.

Humidity Brings Trouble

Concerning our service problems, the chief one has been caused by the excessive moisture or high humidity of this climate; the boxes sweat, causing moisture to condense on the switches, etc., with trouble resulting.

General Motors has remedied a big part of this in the present models by putting the cold control switch on the inside of the box. We are sure that they have corrected a big part of the trouble that we have experienced. These severe climatic conditions have made the oil-porcelain exterior units the best selling, notwithstanding the higher price.

We might make the following suggestions to the manufacturers, not for a change in design particularly, but for more helpful sales and service literature in Spanish. We believe that Latin America provides, or will provide, enough of a market to warrant the printing of this type of material in Spanish, not only as a help to the distributor, but to serve as an educational program to the public.

'Guarantee Conscious'

People in Mexico are very "guarantee conscious." We cannot understand the big discrepancy in manufacturers' guarantees in United States and in Mexico. From one year to five years is a big jump. Most of the local distributors have taken it upon themselves to extend this guarantee and back it themselves.

After all, it is a difficult question to answer: "Why does the manufacturer guarantee the same unit in the United States for five years, while down here, just three hundred miles away, they only guarantee it for one year?"

It is for this reason that American refrigerator advertising that broadcasts long time guarantees, is a detriment to us rather than a help.

'News' the Authority

We first became subscribers to the NEWS by recommendation of Frigidaire. We have since found it invaluable in our sales work. Your published specifications are alone worth the price. The NEWS being published as it is, independently of any manufacturer, is accepted here as an unbiased authority both to the customer and to competition. We would not be without it.

The Ideal Motor Co., S. A. handles all General Motors passenger cars and trucks, Frigidaire, Delco light plants and the Electrolux kerosene-operated refrigerator. Our personnel:

President, William R. Blagg; general manager, A. F. Neal; assistant manager, sales and refrigeration, B. M. Hopps; secretary and treasurer, Cecil W. Blagg.

We hope that this letter may be of some use, and take this opportunity of extending you an invitation to visit Tampico. We perhaps can't give you much dope on the refrigeration industry, but we can promise some of the best hunting and fishing in North America.

B. M. HOPPS,
Assistant Manager

Business Must Be Good in Venezuela!

Alberto Espinosa
Oficina Tecnica
Caracas, Venezuela
Nov. 3, 1936

Dear Sirs:

Thanks for your letter of Oct. 16, contents of which have been carefully noted. I appreciate fully the interest you show in my business, and would gladly cooperate with you in your magazine, AIR CONDITIONING AND REFRIGERATION NEWS, but pressure of business at the moment make it impracticable to give you all the information you require at such short notice. At a future date I shall send you the details you require for future reference.

I have always found the NEWS very interesting and it has been helpful to me on more than one occasion in the development of my business.

ALBERTO ESPINOSA

15% Market Saturation Leads Argentine Westinghouse to Expect Increasing Volume for Coming Years

Cia. Westinghouse
Electric Internacional, S.A.
Avenida de Mayo 1035, Buenos Aires

Editor:

Your letter of Oct. 15th came by boat mail, and therefore arrived a little late for us to give you detailed information of our activities. However, we will send this letter by airmail as any detailed information sent by boat mail would not arrive in time.

Westinghouse leads the entire Argentine market in the sale of household refrigerators. As you know, Westinghouse was one of the last to put refrigerators on the market.

Here we only have four years of selling refrigerators, but notwithstanding this we have created an organization that little by little has given us a foremost position. We have more than 5,000 domestic refrigerators installed—for the most part in the city of Buenos Aires.

In the interior of the country there is mostly direct current, which prevents our selling great quantities as we haven't got units for this current. The current used is a.c., 220 volts, 50 cycles, and d.c., 220 volts, with a tendency to eliminate the latter.

The building of apartment houses is now passing through one of its most important periods (although actually there is less building going on now than a year ago), and the majority of these buildings have refrigerators installed. Westinghouse has 170 buildings with refrigerators, with a total of 2,667 units.

Sales to the public in general are increasing year by year. Prospects are good. In Buenos Aires we calculate that only 15% of the possible sales have been effected until now.

Sales of commercial refrigeration are also increasing steadily. Customers are convinced of the advantages of electric refrigeration.

Most effective sales arguments: Preserving foods is the most important. Ice making not so important as people do not drink too much iced drinks. For apartment houses the argument is: more rent for your house.

Service problems: No service problems! Hermetically sealed units require very little service. Only six machanics to service more than 5,000 units.

Changes in design: Standard models in use in U.S.A. are well adaptable in this country. We do not think it necessary to change models.

Other lines of business: Central refrigeration ice-making plants, air conditioning, and all the lines that are manufactured by the Westinghouse companies.

Our sales organization is divided into the following form: Salesmen to sell to apartment houses; salesmen to sell to dealers; salesmen to sell commercial refrigerators; and salesmen to sell household refrigerators.

The last two groups do canvassing. The greatest difficulty that we come up against is finding good salesmen.

Mr. J. W. White, who for the last six years has been the managing director of this branch, has been appointed general manager of the Westinghouse Electric International Co., with offices at 150 Broadway, New York City. He is on his way home now and will arrive in New York City on Nov. 25.

A. ALVAREZ, Sales Manager.

Summer Season Is Just Beginning In Brazil

Electro-Frigor Ltda.
Rua General Camara, 110
Rio de Janeiro, Brazil

Editor:

Your letter of Oct. 16 arrived here today only and incidently just at the beginning of our first rush of this summer season so that every body is very busy here.

Although we do not believe that this letter will reach you still in time before Dec. 2, we wish to give you some data about our company which has been organized five years ago.

We are the only especialists in electric refrigeration in Rio, dealing exclusively in commercial refrigeration and represent at present the Curtis Refrigerating Machine Co., St. Louis, and Perfection Refrigeration Parts Co., Harvey, Ill.

We employ about 40 service men in our shops, are giving service on all makes and have pretty close to 1,000 commercial installations of our own in this city.

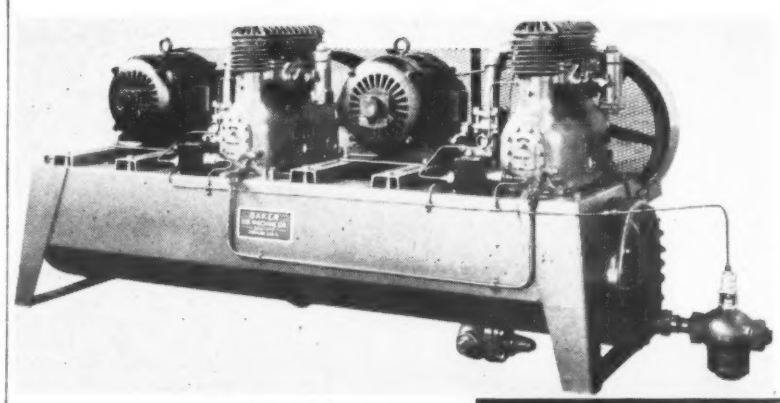
Our shops and the offices are installed in the company's own premises and the firm is constituted of two partners H. G. Schraneck, commercial manager and F. C. Cavalcanti, technical manager, both connected for more than eight years with the electric refrigeration industry, having managed for some years Frigidaire sales in this town.

You must excuse us if we do not answer at the present all the other questions of your letter, however, we shall be pleased to do so at some other time, although we do not believe in judging things through some other fellows spectacles and are of the opinion that it would be best to come down to South America for yourself.

H. G. SCHRANECK.

MEMO:
Check up on the Baker Line—

77 MODELS for Freon or Methyl Chloride
1-4 to 60 H.P.

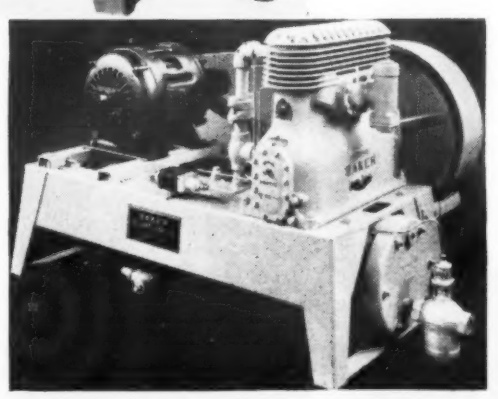


Baker dual four cylinder type water cooled Freon or methyl chloride unit with automatic capacity control to insure operation economy. Available in a wide range of capacities.

MAKE it a point to check up on the Baker line—it's the most complete on the market both in models and profit opportunities. Baker offers 77 models for Freon and methyl chloride from the two cylinder 1/4 H.P. size to the 60 H.P. dual mounted four cylinder self-contained unit. Larger capacities to 100 tons in single units. With a Baker unit designed exactly to fit every refrigerating and air conditioning requirement, selling problems are simplified.

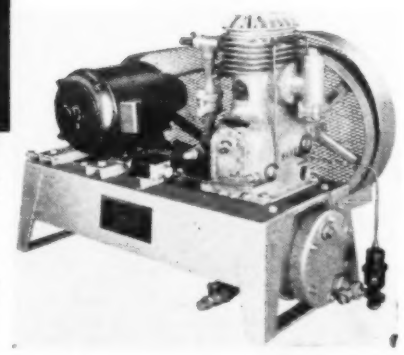
World-wide is Baker's fame for efficiency, dependability and low operating cost. Baker installations in fifty-three countries and and every state in the Union are the concrete evidence of more than thirty years of quality leadership.

Baker mechanical cooling now in daily operation in Alaska, Albania, Argentina, Australia, Brazil, British Honduras, Canada, Philippines (Dutch East Indies), Ceylon, Colombia, Costa Rica, Cuba, Czecho-Slovakia, Denmark, Dominican Republic, England, Fiji Islands, Formosa, France, Germany, Gibralter, Goa (Portuguese India), Greece, Guam, Guatemala, Haiti, Hawaiian Islands, Honduras, India, Italy, Jamaica, Japan, Java, Malta, Mexico, New Zealand, Nyasaland, Panama, Peru, Philippine Islands, Portuguese East Africa, Puerto Rico, Rhodesia, Salvador, Samoa, Seychelles (Island), Spain, St. Kitts, St. Marten's, Trinidad, Union of South Africa, Venezuela.



Baker four cylinder self-contained unit with full automatic control. Designed for Freon or methyl chloride.

Baker two cylinder type unit for Freon or methyl chloride. Available in air and water cooled models to 7½ H. P.



BAKER Ice Machine Company, Inc.
1506 Evans St., OMAHA, NEBRASKA
Branch Factories: Ft. Worth, Seattle, Los Angeles
Eastern Sales: New York City Central Sales: Chicago
AUTHORITY ON MECHANICAL COOLING FOR OVER 30 YEARS

Development of Market for Refrigeration And Air Conditioning in Tunis Awaits Improvement in Economic Situation

(Translation)
Etablissements Leclercq, Tunis
27 Rue Blanche
Paris, France
Aug. 1, 1936.

Editor:

I have the honor of acknowledging receipt of your letter of July 28 and like you I sincerely regret not having had the pleasure of your visit.

I can readily understand that your time would be very limited on a trip as important as that you have just finished. Following is some of the information for which you asked:

Les Etablissements Leclercq were founded by myself in 1897, that is to say 39 years ago. We started out as exclusive agents for the Aermotor Co., 2500 Roosevelt Road, Chicago, Ill., and since that date have remained on very friendly terms with this firm for whom we have always been the exclusive agent for North Africa and France, as well as for the French colonies.

Later we expanded our business by taking on a branch of farm machinery, and are the exclusive agent in Tunis for the Allis Chalmers Mfg. Co., Milwaukee, Wis.

The farm machinery business having been badly hit by the economic depression, we were induced three years ago to establish a new independent subsidiary which was named "Les Arts Menagers" and which handles chiefly household appliances of which the principal branch is refrigeration equipment. We are the exclusive agents of the Sparks Withington Co., Jackson, Mich., and are in contact with different purveyors in the United States such as:

The Super-Cold Corp. in Los Angeles.

Melchior, Armstrong, Dessau, etc.

All domestic and commercial refrigeration equipment is of interest to us. Household refrigeration is particularly well developed in North Africa since the lowering of the dollar which makes prices more approachable. Most American makes are represented in Tunis where there is at the present time a superabundance of dealers. Tunis being a very small country of which the absorption capacity is slight, this saturation of dealers has ended after a year in a massacre of prices and terms of payment.

We are convinced that in the near future there will be an elimination of certain dealers who have not a sufficient organization and who will be unable to keep going. The buying capacity of the public in Tunis is the weaker because it is a country essentially agricultural and because the crops in the last years have been either very poor or sold at very low prices. There are nevertheless some possibilities, but it is necessary to be patient and wait.

As far as our own particular firm goes, we have at our command extensive resources because we have been established in Tunis for nearly forty years and we have many friends here. Our agricultural machine business was one of the most important in Tunis.

We have tried during the past year to import some air-conditioning equipment, but being a little short of money, the moment does not seem to have come to develop this branch, which, however, will offer soon a major interest in a country semi-tropical as North Africa. But it is necessary to wait until the economic situation improves.

We should be pleased to receive information from you on new refrigeration equipment—air conditioners, beer pumps, ice containers, commercial cabinets, etc. We always read your paper with great interest.

Our business is in the form of a joint stock company, but the undersigned has had entire control since the beginning. He divides his time between Tunis and Paris and has just spent five months in Tunis. In Paris, our office is an office for correspondence and purchasing. We ask our correspondents to always send their mail at once to Paris and to Tunis.

Duties on refrigeration equipment are a little less high in Tunis than in France. It would be a good idea if you would inform your friends who have occasion to export equipment to Tunis, that it is necessary with each shipment to include an account indicating the weight, details of the different parts and the different metals used in the refrigeration equipment.

For example, for a household refrigerator the duty in Tunis applies a special tariff on electric motors, another tax on compressors, another tax on the cabinet and finally a tax on parts of nickel or tin. If this information is not furnished, it is necessary to take the various parts out and weigh them, making the work very complicated.

I believe that I have given you some information that will be useful. If some more information is needed, do not hesitate to write me, as I will always be glad to reply.

P. LECLERQ

M. Orengo Directs Firm Selling Westinghouse Units in France

Westinghouse
Electric International Co.
2 Norfolk St., London, W.C.2

Editor:

In reviewing the Oct. 28 issue, which contains a continuation of your interesting comments on the French market, I note a point which deserves correction.

The Westinghouse distributor in France for domestic refrigeration equipment is *not* Monsieur Jean Laval, but: Societe pour le Perfectionnement de la Chaufferie, Paris. (8e)., France.

This firm is a subsidiary of the Babcock & Wilcox Co. of France, and specialises in boiler control and heating and ventilation, as well as refrigeration lines. The Managing Director is Monsieur Louis Orengo.

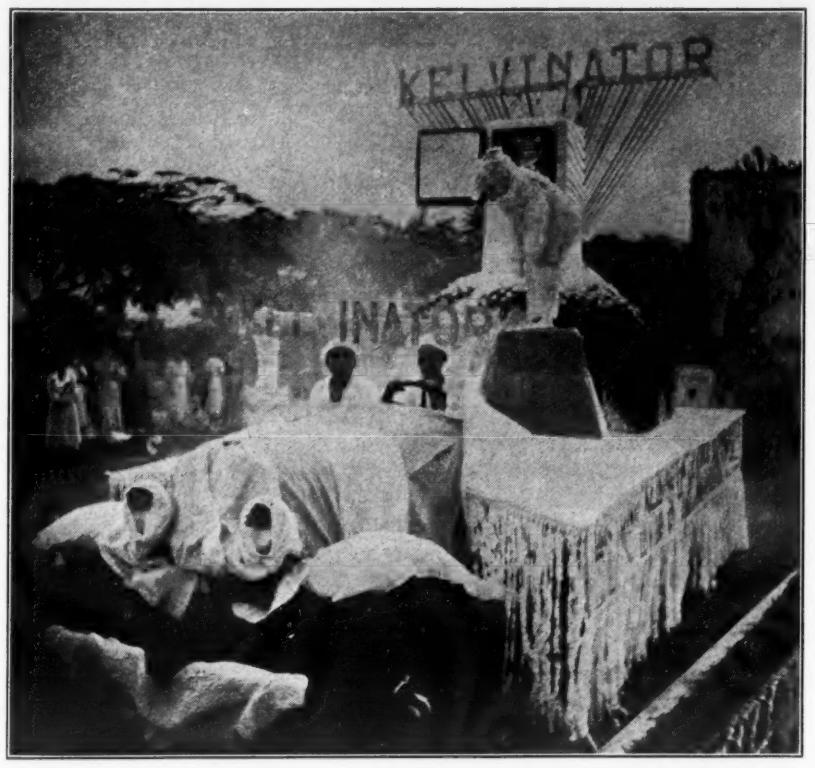
Monsieur Jean Laval, whom you mentioned, is the capable and experienced manager of their domestic and commercial refrigeration department, and is getting all the business that is possible in the circumstances.

Reference is also made to the Westinghouse Co., but I must emphasise that we have no organization in Lourdes, on the contrary, our Head Office for Europe, which also supervises French distributors, is located at No. 2, Norfolk St., Strand, London, W.C.2.

I regret that advantage was not taken during our pleasant meeting in London to clarify the French situation, but hope it is not too late for you to clear up some points which would, otherwise, seem odd to several of your readers.

I. F. BAKER,
European Manager

Fiesta in San Salvador



This Kelvinator float attracted attention in the parade marking the August fiesta in San Salvador. The float represents a Kelvinator atop the North Pole, with the water of the sea imitated by thousands of little blue flowers and imitation snow around the box. A little boy dressed as a polar bear tossed cold fruits to the crowd as the float passed by.

Carmel Cites Need for Governmental Stability before Further Progress Is Made in French Market

Frigidaire
Refrigeration Perfectionnee
46 Rue la Boetie, Paris 8
Nov. 13, 1936

Editor:

Just a few words in answer to your letter of Oct. 16, in which you ask for news about France. This will be short, because I am sure you know pretty well what has happened in France in the last few weeks.

First of all, we find that although the Government had expressed willingness to unlimit or increase quotas on refrigeration, nothing has been done, and furthermore we have very little to expect in future. We are told that our chances are slim, unless some new agreement is made with America on the question of export trade.

Of course, our sales have increased appreciably, due to devaluation. In fact we have doubled our volume during the month of October, as compared with the same month in 1935.

Due to the uncertainty about the effect of increased prices and possible restrictions, we are not forecasting a much larger volume for 1937, although we hope that if we can stabilize our government for a long enough period, business will rapidly pick up. There is still plenty of money in the country, and it would take very little to uncork the bottle. All we need is a little peace of mind and some assurance that there won't be drastic changes every month, like we have experienced during the past year or so.

I am pleased to say that about service troubles, we did not have any really worth mentioning. We have of course a small quota of daily grief, but on the whole our products have stood every test and I cannot refer to any particular trouble, due to defective design or material.

I am pleased that you were not too disappointed in what you saw and heard in Paris, and surely do appreciate the space you have given in your paper, to France.

E. CARMEL

Belgian Manufacturer Finds Business Increase in Butcher's Display Cases

(Translation)
Societe Anonyme Des Ateliers
B. Lebrun
Nimy-lez-Mons
Belgium
Nov. 14, 1936

Editor:

I have just received your letter of Oct. 17, and am afraid that my answer is too late to be of use to you.

There has not been much change in the Belgium market since your trip through here last June. Belgium still has more interest in refrigeration, in proportion to its population of 8 million inhabitants, than many other countries, but the European political situation does not allow the same view of the revival of business and new outburst which I ascertained in the United States. In Belgium, nevertheless, the situation seems to be improving from day to day.

For our factory, the sales this year have been larger than those of preceding years, and we hope to beat our previous records in the commercial group of methyl chloride.

This year, butchers cases of the smallest models (3 to 4 cubic meters), have seemed to be the most popular with our customers. The forced ventilation system had been used by us for many years before the appearance of "Forcedraft" increased its vogue a great deal. Many retail shops have equipped themselves with beer coolers.

The French market is quiet and will be until matters clear up, these contingencies suppressed and the custom duties diminished 15%.

In reply to your fourth paragraph, I should like to say that we have not had particularly much service trouble this year; on this subject, some new thermostatic controls have brought us excellent results.

For the beginning of 1937, we are going to have a new type of compressor—⅓ and ½ hp. twin-cylinder which will replace our old model, and we are bringing out a compressor of ¼ hp. of the same model. I shall be pleased to give you more information on this new type, after its introduction.

M. MALENGRET.

Education Needed on Air Conditioning In Mexico

Carrier-Brunswick de Mexico, S. A.
Monterrey, N. L.

Editor:

We are very pleased to give you some information on our company and refrigeration equipment in this territory.

First, let us express that your "Around the World" series has been very interesting to follow as it has shown us the problems and difficulties which other distributors in foreign countries are up against, many of which also apply to this country.

Our organization, Carrier-Brunswick de Mexico, S. A., is an affiliated company of Carrier Corp. in Newark, N. J. Our main office is situated in Mexico City, Edificion Banco Mexicano, S. A., Desp. 409, and we are sure that our James A. Evans, who is the general manager of the company, will be very glad to give you some more specific information with respect to our organization and the market for refrigeration and air conditioning equipment in Mexico.

This branch in Monterrey was opened a little more than a year ago, to take care of the commercial refrigeration and air-conditioning market in Monterrey and the Northern part of Mexico. Our branch in Monterrey has been selling both air-conditioning equipment for comfort, air conditioning for industrial purposes and straight commercial refrigeration.

In all three lines, we have to do quite a lot of educational work. In the straight commercial refrigeration, we have to educate the people not only to electrical refrigeration, but to the use of any kind of refrigeration.

In the field of comfort air conditioning, the selling just boils down to a complete educational campaign which requires quite a lot of money as well as time.

Even in the Winter time, when it gets quite cold in Monterrey and vicinity, people have lived without any heating facilities up to very recent date, as it was always considered dangerous to step from a warm room into the cold outside air. We find the same problem with summer air conditioning, and it takes a lot of education to overcome some of the old ideas which people still have.

Although Monterrey is a city of about 150,000 inhabitants, the buying population is quite a small percentage of this. A city of this size in Mexico cannot be compared with a city of equal size in the United States.

Straight commercial refrigeration as well as small unit air conditioning has to be sold on terms, which are usually more or less the same as the one which are being offered in the United States for such type of equipment.

Let us again state that we find the NEWS very interesting and helpful to our business. We are very glad that you are also including news from the world in general, and hope that we might have the pleasure of helping you with some news items from this country.

F. G. WESTENDARP

South African Buys Service Books and Asks for Catalogs

112 Fraser St.
Kenilworth, Johannesburg

Gentlemen:

Having had the pleasure of your REFRIGERATION NEWS being posted to me the last few months, and having gained considerable knowledge therefrom, I would esteem it a favor, if you would post by return mail, a copy your MASTER SERVICE MANUAL, and REFRIGERATION AND AIR CONDITIONING SPECIFICATIONS, and forward orders for other books listed herewith.

With this letter I have included the amount of eighty shillings, which should be the equivalent to sixteen dollars, and therefore trust that you will expedite this order to me.

I have noticed from time to time, when reading through your correspondence columns, that numerous readers of yours ask you to place their names on manufactors catalogue mailing lists, and therefore should be glad if you could have this privilege bestowed upon me.

D. M. PEARSON.

LONG SERVICE — MANHATTAN V-BELTS

ALSO— Minimum Inelastic Stretch High Resistance to Side Wear. Uniform Flexibility. Wide Margin of Strength. Maximum Traction. Maximum Resistance to Structural Breakdown.

Long service records are assured when you use Manhattan V-Belts because their exclusive construction - - a single layer endless whipcord section completely floated in rubber to hold together and cushion each cord in the whipcord strength member - - minimizes structural breakdown. Thus greatly increased belt life results. For more efficient performance and to eliminate noise - - specify Manhattan V-Belts.

THE MANHATTAN RUBBER MFG. DIVISION
of Raybestos-Manhattan, Inc.
45 Townsend Street Passaic, N. J.

PERFECTION
Refrigeration Parts
are *Certified to Excel*

Ask for catalog covering complete line of Compressor Parts, Valves, and Fittings

PERFECTION
REFRIGERATION PARTS CO.
HARVEY, ILLINOIS

Speakers at Foreign Trade Meeting Point To Nationalistic Policies as One of Chief Obstacles to International Commerce

(*Continued from Page 1, Column 5*)

commerce as an indication that we have made a successful beginning of our program of trade restoration.

"The tendency toward decreased trade has been stopped, in many instances reversed. Both exports and imports show consistent gains. We have embarked on a policy of commercial peace. We are hopeful that it will encourage prosperity for all and lead thereby to a lessening of the economic tensions that set the stage for revolution and war."

Restoration of International Confidence Needed—Strawn

Restoration of confidence and a reversal of the trend toward militant nationalism are the two biggest problems facing the world today, declared Silas H. Strawn of Chicago at the banquet.

"Monetary or economic conferences such as these avail nothing," he insisted, "unless the participants in such conferences have confidence in each other, unless they know that when the representatives of nations clasp their hands in friendship their hearts are with their hands, and that when business men evolve a program it will be honored by their respective governments.

"Economic recovery and world peace can be accomplished only in the cooperation of business and government," he averred.

"Business men of this country know that other nations cannot purchase our goods unless we purchase some of theirs. They cannot purchase raw materials unless they have markets for their manufactured goods. Yet our markets cannot be used as a dumping ground."

Gen. Dawes Pleads for Conference Table

General Charles Gates Dawes, former Vice President of the United States, spoke on the subject, "Is War or Peace in Europe Possible?" and said that "the conference table provides the most certain method of ironing out the differences between nations."

The "terrible war which is brewing abroad," he asserted, could be a catastrophe which would engulf modern civilization. Pointing out the futility of the efforts of the League of Nations to prevent by force Italy's conquest of Ethopia, he declared that much more could have been accomplished had all parties been seated around a table to discuss the matter amicably.

Nationalism Impoverishes People, Salinger Says

Harry Salinger, vice president of the First National Bank of Chicago and an international authority on foreign trade, told the conference that once greater freedom in the exchange of goods and services—so vital to the movement of world trade—is assured, they might anticipate a rapid growth of a world prosperity built on a solid foundation.

To foster nationalism with its unnatural restriction of trade, he said, is not progressive but reactionary. Rather than improving the well-being of the people, it impoverishes them, he asserted.

"We all know that curtailment of world credit stymies world industrial progress," he reminded his hearers. "Our foreign policy should be characterized by a willingness to devote its energies and capital to supplying better goods and services at lower prices, broadening consumption, elevating living standards, and increasing purchasing power.

"I have been convinced for years that the economic well-being of our nation is dependent upon the continuance and expansion of our foreign trade; and the policy of our government should be to encourage and stimulate friendly relations with other countries.

"It seems to me inevitable that the abandonment of our foreign trade would lead to a lower standard of living and precipitate great social changes.

"Instead of pursuing the policy of despair advocated by isolationists, we must deal energetically with the problem of extending our foreign trade continuously, not only in the interests of our commercial welfare, but in the hope of preserving world peace as well.

"The world today," according to Mr. Salinger, "has an enormous pent-up appetite for goods and necessities which, if satisfied through creation of credit and the ability to pay, would usher the human race into an era of prosperity such as the world has never before seen."

Fred H. Clutton, secretary of the Chicago Board of Trade, told the conference that "so long as bounties are paid for political control or political peace, all international trade with respect to farm produce will be seriously disturbed and disarranged."

Gorrell Traces Growth Of Air Transportation

An up-to-the-minute map of the world, showing scheduled aviation lines, featured the talk of Col. Edgar S. Gorrell, president, Air Transport Association of America, when he addressed the general session on Thursday morning.

Air lines are being planned everywhere, he said. Of the 261,000 miles of lines outside the United States, 40,000 are flown by American companies. Foreign companies number 104 with ships operating under 47 different flags.

Col. Gorrell startled his listeners when he forecasted a two and one-half day trip from New York to Buenos Aires. This will be practicable when night flying is deemed feasible and safe. He stated also that air transport across the Atlantic would soon be a reality. The missing link between San Francisco and China will soon be supplied.

Another surprise of the talk was Col. Gorrell's outline of the variety of services the aviation lines are performing. Their carrying of mails and passengers is well known. But their express service uses make them valuable to numerous foreign traders, importers, and exporters.

Praise was given our government for its financial aid in developing air transport. The continued need of this assistance was emphasized by Col. Gorrell by citing the help foreign competitors get from their respective governments.

Carson Reports Progress In Commercial Arbitration

Progress in commercial arbitration in Latin America was described Friday by James S. Carson, vice president, American & Foreign Power Co., Inc. More widespread use of an arbitration clause in commercial contracts was reported.

Reporting on the developments, Mr. Carson stated: "The Inter-American Commercial Arbitration Commission was established a little over two years ago. Its first meeting was held in New York City at the headquarters of the Council on Inter-American Relations on Sept. 26, 1934. The commission at the present time comprises 59 members, representing 19 of the American republics."

The workings of the system may be appreciated from Mr. Carson's following description: "When a controversy arises, the party demanding arbitration notifies the local committee in such Republic, or if such committee is not yet functioning, he notifies the headquarters of the commission and the facilities of the tribunal are immediately made available.

"The method of selecting arbitrators may be specified by the parties, but if no such method is specified, the Arbitration Committee, subject to the governing arbitration law, will nominate, from its panel, qualified persons and send identical lists of such selections to both parties to the controversy.

"The parties may eliminate from such lists one-third of the names without giving the reasons for such elimination and any additional names, for stated reasons. From the names remaining on both lists, the Arbitration Committee then selects the required number of arbitrators.

"According to the rules, such number must always be uneven. Hearings may be either verbal or by correspondence, according to the preference of the parties and the distances involved. Awards are by majority vote and are rendered within 30 days from the date of closing the hearings."

Moran Discusses Fate of Trade under Barter System

Speaking at the Latin American Session of the convention, W. T. Moran, assistant vice president of the National City Bank of New York, gave a rapid survey of what has happened to trade in countries which have resorted to "barter" agreements. Mr. Moran said:

"The loudest complaint from our exporters is directed against Germany, which, through the employment of a subsidized mark, which is quoted in Latin-America anywhere from 20% to 40% under the regular reichsmark, has had what has been considered an unfair advantage."

This subsidized mark has many aliases, such as "coffee mark," "barter mark," "export mark," and "compensation mark," but is best known as the Aski mark.

"In addition to Germany, many other European countries, all the way from Finland, Norway, and Denmark on one end, to Italy and Spain on the other, have entered into so-called Compensation Arrangements.

"For the whole year 1935, Germany's total exports were reported to be only slightly larger than in 1934, and were considerably smaller than in 1932, whereas the shipments of all other exporting nations were much larger last year than in 1932.

"However, Germany is said to have converted an import balance for the first six months of last year into an export balance for the first six months of this year. And our exporters, unable to overcome that 20 to 40% handicap on prices, lost valuable orders which ordinarily would have been theirs by right of better quality and adaptability.

"While this has been our experience in all of Latin-America, it has been particularly so in Brazil, Chile, Peru, Colombia, Ecuador, Guatemala, and Nicaragua."

Mr. Moran pointed out that, in the West Indies, barter has not displaced American goods "to any great extent." In Mexico several articles which formerly came from the United States are now coming from Germany. In Central America, Germany has a preferential market for hardware, building materials, coffee machinery, and automobiles.

Mr. Moran explained: "There is a distinct feeling, quite justified at the moment but yet to be tested over the long pull, that German purchases and sales in Central America and in Colombia, have reached the saturation point. These countries may insist on beneficial modifications when the agreements come up for renewal. They particularly may ask for a fixed rate for the Aski mark in order to remove the speculative risk to which they are now subjected."

German exporters underquote us by 40% in Colombia, according to Mr. Moran. "In Brazil," he said, "where we always supplied some 25% of the imports against some 12% by Germany, we have witnessed a great change. As a result of the clearing agreement, purchases from Germany are greater than from the United States.

"I believe nearly every competitive article of American manufacture is suffering competition from similar German products, the export of which is subsidized. We are underbid 20% or more on sulphur, fiber sheets, chains, and motor trucks, and 30% to 35% on typewriters, tires and tubes, razor blades, optical goods, adding machines, and several other articles.

"Other Latin-American countries may follow the lead of Nicaragua and Brazil in limiting the amount of products sold on a barter basis," Mr. Moran concluded.

International Trade May Lessen Tensions, Kah Believes

"International trade, if placed upon a sound and healthy basis, will lessen the existing tension between nations" was the opinion expressed by Tschou-Kwong R. Kah, consul general of China, speaking at the American Chinese Session of the 23rd National Foreign Trade convention.

Recalling that trade between China and the United States dates back 153 years, Mr. Kah said that there are now "over 700 American firms throughout China."

For the past five years, according to Mr. Kah, America has held the leading position in China's foreign trade. Pointing to the fact that the trade is mutually complementary, Mr. Kah said:

"Here is an example of international trade development which has caused no friction, no cut-throat competition, and no ill-feelings but on the contrary, it has strengthened the ties of friendship between China and America, and has contributed materially to the economic well-being of the two countries.

"The vast provinces of China are being welded together into a strong national power. Whereas, five years ago, only five provinces were under the control of the central government, there are now 12.

"Such great faith and confidence in America's ideals are held by the Chinese that the trade between the two countries is firmly intrenched and will expand as the economic and political plans develop China.

"China is undergoing an intellectual renaissance and modernization. It is growing in national consciousness and thus overcoming an internal weakness that has been holding it back. Education is being fostered by the Chinese. Many of its students are sent abroad annually, those coming to the United States being greater in number than to any other country.

"Agriculture is being pushed so that not only will China's own needs for foods be met by her own production, but she will have an export surplus.

"There has been in the last year a gradual but continuous expansion of private capital investment in industrial undertakings, while attesting the transition from handicraft and cottage industries to mechanical industry is the fact that there are today more cities under construction in China than ever before.

"China having thus determined to develop, with the gradual unfolding of her program of reconstruction, her needs for foreign products and manufactures will multiply and her foreign trade will grow. But China lacks adequate capital and she needs help—financial help.

"The question of how to assist her, however, is a problem when her credit in this country is in such an unfavorable position. We are informed, how-

(*Continued on Page 24, Column 3*)

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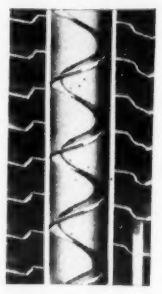

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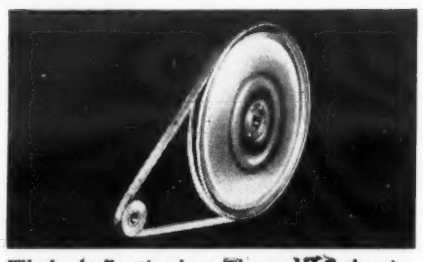

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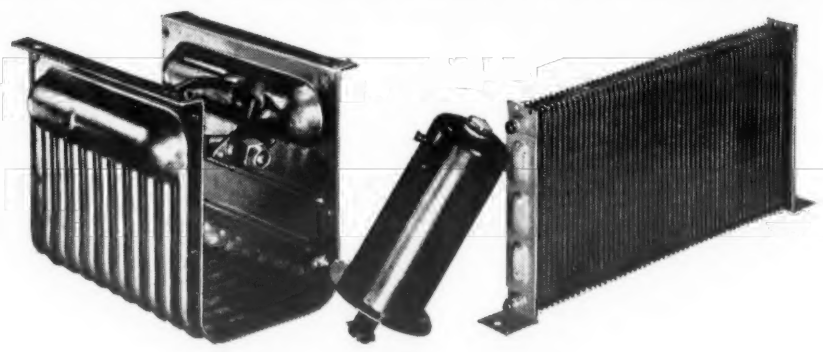

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Techniques to Gain Foreign Business Discussed at Trade Convention

(*Continued from Page 23, Column 5*)

ever, that recent loans have been fairly well met and that Chinese government officials have a genuine desire to consider past indebtedness.

"Of course, European nations have assisted directly by use of the Boxer Indemnity Funds, by which Great Britain as well as Italy has aided in the construction of railroads.

"Recent reports indicate that the Netherlands Boxer Fund is being used for a modern sewage and drainage system, and only a few weeks ago it was reported that England would extend a substantial credit to China. Germany, France, and Belgium have all supplied credit, or are working with China on proposed projects.

"The American Economic Mission returned last year convinced that the United States needed better credit facilities and agencies established and operating to assist our trade and put us on a par with other nations in assisting in the proper development of this New Life in China.

"A good deal of my time in the ensuing 12 months after my return last year has been spent in endeavoring to stimulate just such a movement, but unfortunately, with the election year looming, uncertainty as to our own business procedures and what not, it has been very difficult to get any action and so far the only progress that I am in position to report is that we have stimulated interest and got people both in and out of the government thinking along the lines that we have hoped to bring to fruition and that we are still anxious to achieve this most desirable result by some means or other.

"I don't think it is too much to say that a good deal of the stimulus that has brought about this unification and forced the divergent elements in China to forget their differences and to pool their interests under the direction of a great, wise, and enlightened ruler has been due to the effect of roughly exerted pressure from without, and I think it very possible that all this may result in bringing about a condition of affairs not anticipated nor wholly welcome to the pressing agencies, but which in the long run will prove to be one of the greatest blessings that has come to China in the long centuries of its existence."

Coldren Advises Appeal in Language of Common People

Creation of foreign consumer demand sufficiently strong to make the customer go to the store and buy a product by name and to accept no substitute, is the secret of success in exploring foreign markets for food specialties, declared C. C. Coldren, vice president-export, Quaker Oats Co., at the Export-Import Merchandising Session.

Careful study of the average consumer's demands will show his likes and dislikes and advertising and sales policies must be adapted according to each market's requirements, stated the speaker.

The importance of localizing advertising and sales appeals was stressed by Mr. Coldren, when he said:

"I am a believer that foreign advertising is best when it appears in local dress. Illustrations should depict scenes familiar to the readers—translations must not be scholarly, but written exactly in the language of the average consumer.

"The thing that stands out is that your product must contain nothing which would give the public to understand that it is a strange, foreign food, and thus build up resistance against it instead of good will for it.

"The appeal to the public should be made in homey language and dress. Show them a family of their own kind—speaking their own language—and consuming your product in their own way in familiar surroundings."

To illustrate his company's policies along these lines, Mr. Coldren cited the appeals made in many countries. In Siam, his company's product supplies the deficiency of a rice diet. Brazil eats this food specialty because children need it to resist disease. Argentina likes it because it builds up athletes.

Colombia takes it because it is healthful and appetizing in the sea level water supply which must be boiled as a health precaution.

Japan desires big men, and the product supplies the needed food elements. Yucatan uses it in bath waters to cure skin disorders.

National Trade Interwoven With World Business

Our national trade is interwoven with world business, stated Curt G. Pfeiffer, president, National Council of American Importers and Traders. Excessive protection will destroy domestic trade because it will be deprived of export markets and raw material imports.

As domestic production and employment figures rise and fall, it is significant to appreciate that export and import figures follow the same trend. The more we trade, the more we prosper, he asserted.

In speaking on this point, Mr. Pfeiffer said:

"In our own case, in spite of our great natural wealth, we have, from the earliest times, drawn on foreign sources for many products required by industry, agriculture, and the general consumer. Many of these have been, and still are, absolutely indispensable to our producers, while others have become so essential, to our accepted American manner of life, that they must now be considered national necessities.

"Similarly, we have always depended on foreign buyers to take large quantities of agricultural products, which cannot be entirely consumed at home, and to purchase from us, mass production and other commodities, manufactured in excess of home market needs."

There are, Mr. Pfeiffer pointed out, certain naturally conditioned limits beyond which trade restrictions cannot be safely carried, lest they retard, rather than speed, the attainment of that desirable economic balance between producer and consumer interests. He continued:

"All countries now admit these undeniable facts; they are all suffering from the cumulative effects of post-war tariff and trade restrictions, which they have continued to impose upon each other, until they threaten to demoralize not only their foreign but also their domestic trade.

"They appear ready to follow the lead taken by the United States, in a concerted effort to restore a freer, and more normal, flow of commodities, through the negotiation of trade agreements, which aim to reciprocally reduce duties, and remove trade restrictions, found to have been excessive."

Sitterley Discusses Functions Of Export Trade Papers

Two very important functions of export trade papers are to reach highly specialized groups of readers carrying messages from manufacturers and to assist in merchandising products abroad, according to James E. Sitterley, publisher of Importers Guide, in his talk to the Export-Import merchandising session.

"Trade ethics are built up and maintained by the export press," he said. "It serves as a connecting link between business men at home and abroad."

Mr. Sitterley brought home clearly the functions of export papers by declaring:

"The value of export trade papers as factors in speaking to the multitudes we would all like to speak to personally but cannot, their importance and influence in the merchandising field, is more and more being appreciated because it is possible, through this medium, to reach the dealers throughout the world who control the large portion of overseas buying power.

"Export trade papers enable their readers to keep in touch with what is going on in their lines of business in the United States, and because of the careful selection of readers, the latest developments and trade news of American business reach a group which controls the major portion of trade."

America Must Be Capable of Self-Sustenance, Forbes Says

Speaking at the Japanese-American Trade Council Session, the Hon. W. Cameron Forbes, former ambassador to Japan said:

"I hold it as a fundamental postulate that the United States must produce within its borders a sufficient quantity of articles for home consumption in time of war and stress, and it would be a suicidal policy for us to give up our home manufactures and means of production to any country."

Pointing out that the "story of our trade with Japan is largely one of textiles, the United States buying silk and supplying cotton," Mr. Forbes stated: "it would seem as though the normal course of trade bids fair to restore the balance to a more desirable trade relationship of an exchange of commodities on a fairly even basis."

Mr. Forbes urged that the Japanese voluntarily raise their price structure "so as to avoid creating a condition which would almost infallibly bring about a remedial action."

Speaking of the "Open Door" in regard to Manchuria, Mr. Forbes said:

"While the door may have been open, as some observers have put it, someone stood in the door and only allowed to pass through the non-competitive things which they allowed to get through, and competitive things, i. e., things which competed with the Japanese industries, have had pretty hard sledding, and some have been compelled to move out.

"I do not want to dwell on this more than to say that if this policy is found to prevail where the Japanese extend influence into other provinces of China, as they have shown a tendency to do in the north of that harassed country, that there will inevitably be built up a greater and greater international resistance to this impediment to the freedom of trade, which is such an important part of world policy in the Pacific."

Mr. Forbes belittled the possibility of war with Japan as poor statesmanship.

"I look with absolute confidence, under the high statesmanship which Secretary Hull of the present administration has demonstrated many times, for continued friendly and profitable relations between the United States and Japan, amicable solution of differences, and that degree of confidence and mutual friendliness which should characterize the international relationship between two great, proud, and friendly peoples," he concluded.

New Procedures Necessary In Sino-American Relations

New procedures are necessary to handle Japanese-American trade relations, stated Dr. Claudius T. Murchison, president, The Cotton Textile Institute, Inc. The trade is too important to be jeopardized and the peoples of the two countries would not tolerate its adverse development.

Yet the American textile industry must be protected against the low prices of Japanese textiles, and the highly integrated and controlled agencies manufacturing and selling them. The corrective meaure, he would propose, is an adjustment of imports with the full understanding of the two countries' textile industries involved and the two governments.

Adjusting our tariff rates will be no material help, for the Japanese could still enter their textiles at such low prices that they could sell. Raising tariffs would have the effect of driving all countries out of their places in our textile imports except Japan.

Another unsatisfactory solution is trying to control the imports from Japan by bi-laternally balancing the trade. Wherever this method has been tried, Dr. Murchison feels it has been unsuccessful, and the "universal pursuance of such a policy would probably result in a forced diminution of world trade by at least 50%, and no country would be the gainer."

Regarding his proposal of a joint governmental and industrial understanding, Dr. Murchison had the following to say:

"Such a procedure is desirable in theory and inevitable in actuality. From the point of view of our subject, there is one fundamental fact which is unchanging and that is the unqualified sovereignty of each nation as regards access to its home market.

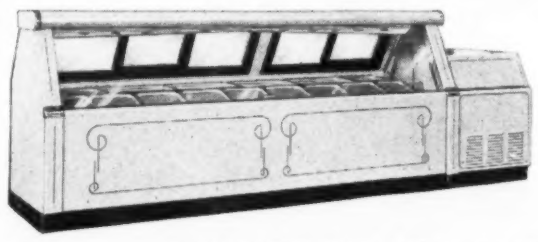
"It is this fundamental truth with its powerful emotional appeal which always tends to minimize the export side of international trade and magnify the import side. This paradoxical trait is inherent in all peoples and is rendered harmless by economic teaching only under circumstances which are favorable and unproductive of fear.

"It is, therefore, truly in the interest of trade promotion that I appeal opportunistically for what at the moment may be termed restriction. But more important than the idea of restriction is the particular manner in which it is to be attained.

"The procedure must be mutual and practical. It should spring from understanding which reaches beyond the two governments concerned to the industries and peoples directly affected. Whatever arrangement is arrived at should be flexible in character, either through the medium of frequent renewals or through the operation of a permanent administrative commission composed jointly of representatives from both countries.

"The objective must be something more than the mere control of volume.

(*Continued on Page 25, Column 1*)



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America Needs Foreign Trade Education Say Speakers at Conference

(*Concluded from Page 24, Column 5*)

Aggregate volume is less important than a carefully calculated distribution of volume over many commodity classifications.

"In the situation under review, it is likewise important that the matter of price, as far as imports are concerned, be not left entirely to competitive determination.

"When price differences on similar goods are as great as from 25 to 50%, the effect upon the domestic price structure is out of proportion to the volume of trade, and even the Japanese exporter is the loser in that he could obtain a much higher price without destroying his volume."

Dickey Sees Growing Importance of Puerto Rico

"Puerto Rico is buying," was the central theme of an address entitled: "The Importance of Puerto Rican Trade" delivered by J. A. Dickey, director of the Association of Sugar Producers of Puerto Rico, in which address he emphasized the fact that during the last fiscal year trade between the United States and its most populous possession amounted to $182,000,000.

In the instance of food products, Mr. Dickey pointed out, Puerto Rico took one-tenth of all the food that left our ports during the same period. She was our best off-shore purchaser of rice and shoes, our second best customer for wheat flour and fertilizers, and our third biggest buyer of lard.

Furthermore, her trade in this country is so extensive that the Department of Commerce lists between five and six hundred items in its Puerto Rican trade records.

While the standard of living of the average Puerto Rican is not yet as high as that of other American citizens, Mr. Dickey stated that it has been and still is rising very rapidly. Citing this rise, he emphasized the obvious trade possibilities when a population of 1,500,000 is steadily closing the gap between itself and the rest of the United States.

As evidence that the rise is destined to continue, Mr. Dickey pointed to the fact that during the fiscal year of 1935-36 Puerto Rico did the heaviest buying in her history; and he indicated that this by no means can entirely be attributed to growing world recovery, since in the boom year of 1928-29 the island purchased but 70% as much as last year.

Micou Explains Need for Clearing Agreements

Urging the removal of exchange restrictions, Creswell M. Micou of Curtis, Mallet-Prevost, Colt & Mosle of New York, expressed the views that the time is now ripe for such action, and that the measures were restraining trade. A gratifying trend is noticeable, he declared. International credit was necessary to facilitate the flow of goods, and its renewed movement will keep pace with removal of restrictions.

Mr. Micou examined the effects of clearing systems from three points of view:

First, the exchange restricting countries have found them as a rule disadvantageous.

Second, the free currency countries which have initiated or participated in clearing agreements have benefited temporarily.

Third, the viewpoint of the United States foregoing resort to clearing agreements. Its traders have suffered in freezing of claims and discriminatory allocations of foreign exchange.

Our governmental policy has been fostered by a long-range view of the situation, and has abstained from clearing agreements. Mr. Micou's explanation of this situation was:

"Experience with clearing agreements during the depression has shown, by and large, dissatisfaction of all nations, participants and non-participants, and harmful effects generally to world trade.

"Certainly it may be said that the degree of governmental control of foreign trade which such a system requires, the canalization of trade in artificial channels and the use of clearing agreements as offensive trade weapons cannot but injure trade.

"These factors are directly opposed to all liberal ideas of trade and lead inevitably to an international managed trade and international strife. Clearing agreements are so directly opposed to our established principles that temporary or isolated advantage, even had it existed, would not have lured us to their adoption."

Removal of restrictions and encouragement of credit are vital to restore trade. On this point, Mr. Micou spoke as follows:

"Settlement of international balances through goods alone would be a painful and slow process, perhaps necessitating drastic reduction in debts to our nationals. Without the aid of international credit merely to facilitate the flow of goods, trade cannot attain large volume.

"When credit flows to move goods it will begin to flow also as a compensating factor in trade, benefiting both creditors and producers. The field for international credit, properly employed, would seem as large as ever, though lending may be more restrained and investments take different form or follow different channels than in the past.

"International credit flees artificial restrictions, but its renewed movement will keep pace with removal of restrictions and play its necessary part in the increase of volume of trade and the further development of natural resources."

Pearsall Urges Building Up American Merchant Marine

"Will the new merchant marine law accomplish its purpose?" was the question raised in an address by C. H. C. Pearsall, president, Colombian Line. A satisfactory answer could not be given, for so much depends upon the interpretations the Maritime Commission places upon the law's provisions. He and other American steamship owners apparently hope for the best, and expect to do everything they can to accomplish the aims of the act.

Pointing out that in South American and West Indian shipping, American lines are outnumbered by foreign competitors who have speedier, larger, and more modern boats, Mr. Pearsall declared:

"These larger and faster foreign vessels are most effective instruments, not only for the transportation of goods, but in promoting foreign trade for their home countries. Our present merchant fleet in foreign trade has an average age of 17 years; by 1940 or 1941, over 90% will be more than 20 years old.

"In ships with speeds of 12 knots and upwards, we stand fifth among the six leading maritime nations, being outranked by nearly five to one by Great Britain.

"Our answer, the only answer, is that we must build ships of competitive size, speed, accommodations, and impressiveness. It is hoped that the new Merchant Marine Act—and the Maritime Commission—will make it possible for American steamship companies to construct this much needed tonnage.

"The basis of the act is parity of costs for the American shipowner in competition with cheaper foreign vessels. The provisions for construction and operating differentials would appear to make that parity possible, but in other directions, the law contains so many restrictions upon the recipient of the differential payments as to seem to defeat the purpose for which the law was enacted. There are too many 'Thou shalt nots', and not enough 'Thou shalts.'

"But in pointing these things out, I do hope that I have not created the impression that the American shipowner regards the new law with apathy. After the past three years of doubt and uncertainty, he is ready and willing to try anything.

"He hopes the new law will work, and will enable him to build and operate the kind of ships needed for the speedy and efficient transportation of our foreign trade, and for the further development of our commercial intercourse with the rest of the world."

Bauer Proposes Joint Action to Foster Trade

The necessity for a trade organization to foster general policies for foreign trade was described by Mr. George F. Bauer, export manager, Automobile Manufacturers' Association, in his illustrated talk at the Commercial Organization dinner.

He stated the automobile industry supports the reciprocal trade act, believes in the unconditional most-favored-nation arrangements, recognizes trade is poly-angular in effects, and therefore seeks the expansion in trade between the United States and the whole world.

Its work in this respect is world-wide, for it has issued pamphlets on the fundamentals in four languages and has had five representatives traveling throughout the globe, addressing meetings of dealers and clubs in 84 countries in about 12 different languages.

The industry realizes that the total amount of export business in automobiles is not limited, but can be expanded by joint action, according to Mr. Bauer.

A special problem which confronts exporters of automobiles is, Mr. Bauer said, keeping prices to consumers low. Taxes and numerous other items of expense are studied most carefully and kept to a minimum. Crating for export causes an excessive cost to the user, for in many countries, the cost of the box is dutiable and the duty-paid value, in turn, serves as basis for calculation of internal taxes.

By getting the cooperation of steamship lines, cars may now be shipped safely in such a way that no boxing is necessary and only a minimum of wrapping is required.

Mr. Bauer's talk conveyed the thought that a modification of the idea that exporters must meet their buyers' wishes, is necessary. Foreign car users formerly felt a car would not run without a magneto, so exporters had to conduct an international campaign to get them to appreciate the use of the storage battery system.

The results brought an acceptance of a standard product, rather than one modified to meet individual wishes.

Mahoney Asks Chambers of Commerce to Back Education

"So far as the future of foreign trade in the United States is concerned, I am an optimist," said William H. Mahoney of the Merchants Association of New York. Discussing the foreign commerce promotion and service performed by a Chamber of Commerce, Mr. Mahoney stated:

"It is an amazing fact that among both industrialists and agriculturalists, producers, and dealers alike, so very many are often singularly blind to, or timid about, foreign trade and its opportunities."

Mr. Mahoney urged the secretaries of local Chambers of Commerce to call together the representatives of local houses dealing in overseas commerce to work out plans for promotion, asserting that such service would be beneficial both to the community and the organization. He divided the actual work in general service for trade as a whole and individual services as advice on markets, arbitration, documentation, etc.

Foreign Trade Week Explained by Bacher

Educational and trade-promotion work is the objective of "National Foreign Trade Week," stated Edward L. Bacher, manager, Foreign Commerce Department, Chamber of Commerce of the United States. The number of participating organizations has grown from 300 in 1935 to over 600 in 1936. The Week is held annually during the week containing May 22, "National Maritime Day."

Plans are fostered during the period "to direct attention to foreign trade and its national importance" and "to promote local survey and study of foreign trade possibilities for industries in individual cities and towns."

In closing, Mr. Bacher left these words to his fellow secretaries:

"In 'National Foreign Trade Week' a commercial organization has a well-defined practical undertaking that fits in neatly with a well-rounded community program. The Week helps the organization make its own foreign trade activity known to its community.

"It affords the community a chance to express its views on international questions, often resulting in the local organization discovering much more foreign trade interest and talent than it realized existed within its city limits.

"It breaks down the isolation of individual local units concerned with foreign trade and works for greater harmony and coordination of effort. By bringing foreign trade facts to the public eye and ear, it supplies the basic material upon which sound opinion and policy must be predicated."

Ward Discusses New Banking Regulations

Speaking at the Banking Session of the 23rd National Foreign Trade Convention, Wilbert Ward, assistant vice president of the National City Bank of New York, pointed out the importance of recent litigation in clarifying the use of the "red clause" in commercial letters of credit used in foreign trade.

It will be recalled that the "red clause" permits the negotiating bank to advance a credit, usually of 50%, as prepayment before the delivery of documents indicating that the purchase is made.

Mr. Ward drew attention to the conclusion of the United States Circuit Court of Appeals in the case of Oelberman vs. National City Bank, 79 Fed. 2nd 534.

In this case a Philadelphia wool importer sought to recover damages from the issuing bank for money which had been advanced under the "red clause" to a Chinese wool buyer.

It was later disclosed that the latter had misapplied the funds to speculate in furs.

The Circuit Court of Appeals held, according to Mr. Ward, " in the absence of proof that the bank had knowledge of the misapplication of funds, it was under no duty to go behind the assurances of the beneficiary that he was using the advances in accordance with the letter of credit."

Foreign Trade Should Raise Living Standards, Pierson Says

"Removal of the shackles on foreign trading through international cooperation should well repay the world in terms of improved business, a higher standard of living, more tranquil political and social conditions, and lessened dangers of war," said Mr. Lewis E. Pierson, chairman of the board, Irving Trust Co., in his address on "Shackles on Foreign Trade."

"It is not too much to hope that the lifting of economic pressure which would follow removal of the obstacles to foreign trading might lead the world toward a period of unexampled prosperity. It is time for the leading nations to seek through cooperation and mutual concession a solution to this basic international problem," he said.

Business activity in many countries has been forced either by public works expansion or rearmament, and there are but few countries where a natural recovery has been allowed to develop. Internal activity has increased in the leading nations much faster than international trade.

Mr. Pierson stated that recovery in foreign trade will prove a powerful stimulus to further expansion of business activity and to creating conditions under which the artificial assistance of governments can be withdrawn.

An extensive list of shackles to foreign trade was described by Mr. Pierson. Tariffs have been raised to prohibitive levels and are subject to international political pressure so that they have, in many cases, assumed absurdly exaggerated forms.

Subsidies of various types are condemned, as well as import quotas and embargoes. One of the most onerous of the shackles is found in exchange restrictions, the machinery of which has grown to a point where it has substituted governmental control of foreign trade in its minutest aspects for the free play of economic forces.

Barter arrangements, clearing and compensation agreements also tend to regulate in great detail the exchange of commodities and the methods of payment. As an outgrowth of the various systems of trade control, Mr. Pierson states the "buy national" movements and propaganda have come. Other barriers to foreign trade include:

"Discriminatory and double taxation of foreign enterprises, discriminatory incorporation laws for foreign establishments, patent and trade mark requirements which furnish insufficient protection for foreigners, excessive pure food and drug restrictions and quality standards designed to keep out foreign competition, unnecessarily stringent quarantine requirements on animal, fruit, and vegetable products from abroad, limitation of public works material to domestic supply, unreasonable consular and other documentary requirements, and establishment of monopoly controls in particular commodities."

The restrictive policies as a whole breed reprisals and retaliations throughout the world and start a needless chain of interference with the flow of goods. Regimentation of economic activity has its origin under the control of foreign trade. Quick action on the situation is urged by Mr. Pierson before the movement is further extended and other unsound activities undertaken.

The time is now appropriate, he feels, for recovery has progressed in most countries of the world to a point where governments are beginning to find relief from purely economic pressure, or the necessity for forestalling deflation, and can devote themselves to constructive action and removal of abnormal barriers.

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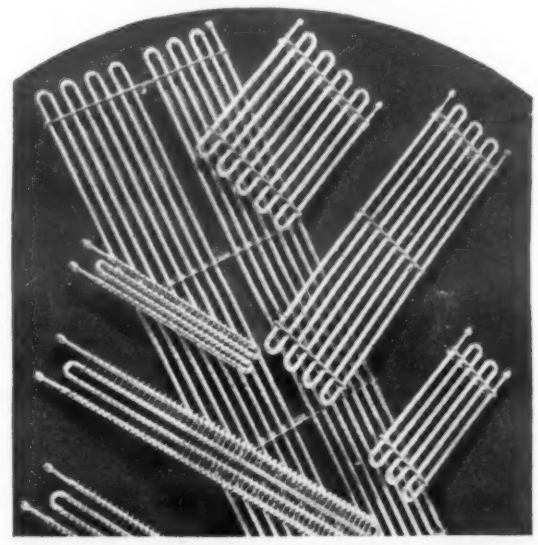

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ADDRESSES AT CHICAGO CONCLAVE REVEAL EXPORT OPPORTUNITIES

Determination of New China to Progress Makes Her a Great Potential Market - - Scott

By George C. Scott,* President, United States Steel Products Co.

It is refreshing to observe decidedly constructive movements that are at work laying the foundation for a New China in the economic world. We have been used to thinking of China as a territory of disintegrated provinces, ruled by a group of military tuchuns or war lords who perpetuated their power by purchasing the support of leading militarists in the provinces by bribery, and who, nursing their aspirations for wider power, were in constant strife and competition among themselves.

The China we have known has been built around the family as the unit of population, with the parents teaching their children the art of earning a living, not deeming it essential to send them to school unless they were designed to follow some of the arts or professions in the higher walks of life. Thus illiteracy prevailed amongst the masses of the nation, and as a result of this family cohesion, often the inhabitants of whole villages belonged to a single clan.

The interest in the family precluded much thought of public affairs. Consequently there was general indifference to politics and a lack of any national consciousness or patriotism.

But in recent years China has been undergoing an intellectual renaissance and its people have been growing receptive to modernizing influences. The seed sown by contacts with scientific thought and learning of the West has grown into an amazing awakening of the Chinese people to a new national outlook and consciousness that is unifying the country against its own internal weaknesses.

China Compared to United States

A comparison of some of China's similarities and contrasts with the United States will to some extent reflect the problems and development possibilities that have struck home in the Chinese mind.

1. With an area of nearly a third more than that of the United States and a population of more than three times that of the United States, the masses of the people are chiefly concerned with eking out a sheer existence, representing a distressingly low purchasing power.

2. Agriculturally, both countries are potentially self-sufficient, each having a great central river valley abounding in agricultural fertility, but farming in China is characterized by small holdings, primitive methods and crude implements.

3. Both are countries of rich mineral resources, but there has never been any systematic investigation of the extent of China's natural wealth, and with no such fundamental knowledge available, it is difficult to promote industrial development with any confidence.

4. Both have large industrious manpower of a high degree of natural intelligence, but it is estimated that the aggregate production capacity of the people of the United States is probably eight times that of China, though its population is only one-third that of China.

5. The basic problems of internal communication and economic organization of both nations are quite similar, but because of China's lack of transportation and communication facilities, about six sevenths of its population is congested in a third of its area, and trade for the most part is confined to small shops under individual or family auspices.

With such fundamental weaknesses as illiteracy and lack of territorial unity looming as definite obstacles to national development, the Central government, which came into power and established the Chinese Republic after the revolution of 1911, set itself the task of promulgating a policy designed to strengthen the country's economic foundations. Dr. Sun Yat-sen was the leader of the Kuomingtang or Chinese Nationalist Party since its beginning as early as 1895, when as "China's Recreation Association" it aimed to drive out the Manchus, reorganize China, and create a united government.

Results Noticeable in 1927

Because of continued political difficulties and rebellions, however, it was not until after establishment of the Nationalist government, in 1927, that the program for reconstruction began to achieve marked results. In 1931, by a People's National Convention called by the Nanking government, a provisional constitution was adopted, which, in addition to rearranging the executive departments, not only established legal rights of the Chinese, declaring them all equal, and guaranteed free speech and free press, but pledged the Government to free education, agricultural and mining progress, elimination of overlapping of taxation and transit duties, and many reforms looking to social adjustments and security.

To facilitate the study and execution of such a program, the National Economic Council was established and, at the request of the Nanking government, the League of Nations appointed and stationed in China a special committee of 12 technical experts to collaborate with the council in its work.

Education Paramount

The problem of educating and encouraging the masses to get themselves out of their mental indifference is paramount, and the outstanding contributor to this cause is James Y. C. Yen (commonly known as Jimmy Yen), who, while doing welfare work in a Chinese Labor battalion in the World war, selected some 1,300 Chinese characters that occured most frequently in the vernacular and made four cheap text books. In 1925 he founded the National Association for the Advancement of Mass Education and in cooperation with the Nationalist government and a corps of teachers, millions of laborers and farmers have been taught to read and write and have received the degree of "literate citizen."

Yen is still active as director of the Mass Education Experimental Station at Tinghsien, Hopei, in an effort to make literate many more millions of Chinese between the ages of 16 and 20. In addition, the Government last year proclaimed a five-year plan of compulsory education for children of school age, and the Minister of Education is now recommending that the period of compulsory education, which began with a modest six months, be extended to eight years.

Scholars now in attendance in elementary schools number 11½ millions and those in high schools 500,000 compared with 2½ millions and 52,000, respectively in 1912, when the republic was established. The number of Chinese students in foreign schools and colleges is greater than ever before, those in the United States, assisted to a considerable extent by the Boxer Indemnity Fund, outnumbering any other nationality.

Political Consolidation Important

The substantial advance made in the country's political consolidation is of significant importance. Five years ago the Central government controlled only five provinces, but under the rapid spread of the Nationalistic movement throughout the length and breadth of the country, in which a strong spirit of "China for the Chinese" prevails, more than a dozen of the 18 provinces have come under its effective administration.

A striking example of this influence was witnessed this past summer when two of the provinces in the southwest of China almost started a rebellion by urging the government to declare war against Japan. This crisis was averted because the aviators who flew the best bombing planes and all the important generals refused to fight and, with other leaders, flew back to Nanking and surrendered. Thus the Nanking government gained control of two new provinces without a fight and without bloodshed.

By contrast, a very cosmopolitan example of this new national consciousness is the advent of songs resembling American songs. For centuries the Chinese have had cheerful work chanteys but now songs of a different spirit, infusing the people with a new sense of their national power and destiny, are becoming popular.

Agriculture Ample

Agriculturally, there are millions of acres of fertile lands in China awaiting economic development, which are capable of producing not only ample food for China's present population, but also a surplus for export. On the part of the government, the National Economic Council is at work on problems of scientific agriculture, well planned and improvements in rural credits and marketing methods while throughout the provinces the rural cooperative movement is rapidly becoming a strong force, there now being 38,000 cooperatives in China, an increase of 12,000 within a year, with membership doubling in that time.

Although there has been as yet no marked increase in the total crop production, prices received for farm products during the last year were appreciably higher and production costs tended to reduce, both to the benefit of the small farmer.

Industrial Facts Being Compiled

Lack of essential facts and reliable statistical data were controlling obstacles to the formation of any concrete projects in the way of China's industrialization. The Minister of Industry has, therefore, undertaken the preparation of a series of "China Industrial Handbooks" embodying investigations and detailed surveys of China's resources, transportation facilities, market conditions and other relevant matters. Because of the extent of the territory and the loosely-knit organization of the present national economy, the work is being handled by specific areas.

The Yangtse valley has been chosen as the national center for heavy industries, which will serve as a general foundation for the gradual industrialization of the whole nation. The hesitancy of private capital to engage in public utilities and industrial enterprises has resulted for the most part in the development of State controlled and operated industries. Reflecting the growth of confidence, how ever, there has been in the last year a gradual but continuous expansion of private capital investment in industrial undertakings, while attesting the transition from handicraft and cottage industries to mechanized industry is the fact that there are today more cities under construction in China than ever before.

Transportation is, of course, a major factor in China's economic development. Although there are at present less than 10,000 miles of completed railways, preparations have been made for very extensive expansion of the country's railway mileage. This new construction has attracted strong interest of European capital. Modern highway construction is proceeding even more rapidly, with 50,000 miles now open to traffic, and motor vehicle transportation developing accordingly.

Moreover, through China's interest in air transportation it is possible for a parcel to reach in a week or even days some destinations which used to take as much as a year, and radio sets and moving pictures bringing contacts with foreign lands are now found in towns which were once entirely cut off from the outer world.

Paralleling the strides made by way of transportation, the development of telephone, telegraph and wireless services has gone far toward assisting China's transition. America has likewise taken a large part in this business. It is surprising to note that there are more radio stations in Shanghai than in any city in the world, regardless of size, as in view of such vast distances China is directing considerable attention to radio for commercial purposes because it makes possible rapid communication at low cost with equipment which may be quickly installed.

Finances Being Standardized

Concurrently, China's whole financial structure is being revolutionized. Dr. T. V. Soong, now chairman of the Bank of China, was the great reformer of the government's finances. It was he who worked out China's tariff autonomy, the abolition of liken, and the removal of the various taels as units in Chinese currency, making the dollar the sole standard. It was he who modernized the various departments of taxation, and for the first time in modern Chinese history actually succeeded in balancing the government budget during the year 1933, without recourse to loans.

Regardless of the causes of the drainage of silver from China during the past few years, the result was a severe internal deflation, which forced the government to change from the silver standard to a managed currency and, on Nov. 3, 1935, to promulgate certain regulations and financial measures for the reorganization of Chinese currency, stabilization of exchange and reorganization of the Central Bank of China into a central reserve bank. The fact that the new policy resulted in general improvement in business and banking circles, and that both the price of silver on the world market and the Chinese dollar exchange have since remained steady, would seem to prove the soundness of the measures adopted.

Shanghai Great Port

Shanghai has the distinction of being the fourth largest port of all the seas, but its Western superiors are all ports which serve territories which have already reached the apex of their development. Shanghai is the natural gateway to a great hinterland that is just being opened by roads, airplanes, railways and modern enterprises, with its future and growth in front and not behind it.

That these movements are the forces of utmost concern in China's life today is evidenced by the character of commercial reports currently received. Taking the cable of Oct. 9, from Commercial Attache Julean Arnold at Shanghai, we read such items as:

"Internal administrative conditions made favorable progress during September in the achievement of national unity * * * * Among the economic measures advocated were lower exchange value of the yuan for encouragement of exports; higher domestic prices to be realized through the control of agriculture and industry, tending to raise the standard of living. * * * * Leading economists recommended increased participation by domestic capital in industrial plants at interior ports rather than concentration at Shanghai * * * * Plans are going forward for the construction of new railway lines in the south, central and north portions of the country * * * * Practically every province in China is also now developing a highway program in cooperation with the National Economic Council, and is endeavoring to do its part in coordinating highway construction into a national network * * * * Shipping facilities on the Yangtse river have been augmented in order to handle the large movement of agricultural products down river * * * * Bank loans on agricultural products have increased * * * * Shanghai reports better economic conditions of the farming masses * * * * Sales of electric power for industrial use throughout Shanghai are increasing * * * * Real estate improvements indicate a better business outlook."

From what other nation do we get such reports of basically constructive activity?

Country Needs Financial Help

China having thus determined to develop, with the gradual unfolding of her program of reconstruction, her needs for foreign products and manufactures will multiply and her foreign trade will grow. But China lacks adequate capital and she needs help —financial help. The question of how to assist her, however, is a problem when her credit in this country is in such an unfavorable position.

We are informed, however, that recent loans have been fairly well met and that Chinese government officials have a genuine desired to consider past indebtedness.

Use of Boxer Funds

Of course, European nations have assisted directly by use of the Boxer Indemnity Funds, by which Great Britain as well as Italy have aided in the construction of railroads. Recent reports indicate that the Netherlands Boxer Fund is being used for a modern sewage and drainage system, and only a few weeks ago it was reported that England would extend a substantial credit to China. Germany, France and Belgium have all supplied credit, or are working with China on proposed projects.

China needs help to raise the country to a basis where the standard of living will compare, say, with that found as the lowest standard in Europe today, with the hope it will improve. For of course modernization is as yet of a spotty nature and by no means general throughout the country. As a whole, China is not over-populated as is often assumed. With modern science and organization applied to agriculture, industry, trade and transportation, the present population could be so distributed as to raise economic levels of its masses very considerably.

American Friendship Aids

American friendship has played a significant role in China's history and trade since 1784, when the "Empress of China," the first American ship to engage in trade with China, our oldest world customer, arrived at at Whampoa, now Canton. American products and wares have come to be favored along with American ideas and methods.

Since the World war we have found that the more we can do to bring about a better understanding and improve the standards of living in another country, the greater will be the demand of that country for the things we produce, proving that, to be foreign trade minded, we must be internationally minded.

America Pioneers China

America has been foremost in the pioneer work that has helped to awaken China to a consciousness of the possibilities of her own nation. The training and education of thousands of Chinese students in our schools and colleges, the unselfish American missionary and philanthropic enterprises in China, John Hay's declaration of the "Open Door" policy, respect for China's sovereignty and territorial integrity by being the first nation to recognize the new republic, a policy of justice and amity in all our dealings with China, have combined to inspire the faith and confidence of the Chinese people in the sincerity of America's purposes.

The foundation of American trade with China has, therefore, been firmly intrenched. It is the commodities, methods and ideas to which the Chinese become accustomed in these impressionable years of the building of her new economic structure that will largely influence her future trade.

*Address before 23rd National Foreign Trade Convention, Nov. 20, 1936.

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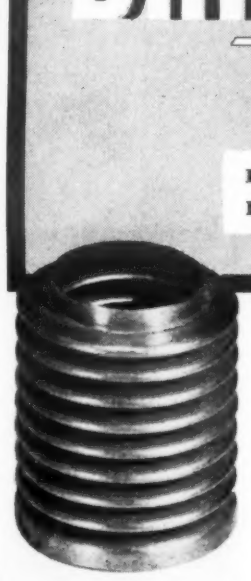

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Prof. Phelps Tells Relation of U. S. Investments to Trade With Latin America

By D. M. Phelps,* Associate Professor, University of Michigan

Long-term investments in Latin America may be divided roughly into four groups: investment in raw material deposits and the facilities necessary for their development, investment in public utility properties, direct loans to to governmental units, and investment in manufacturing plants.

The first two of these—the acquisition and development of raw material deposits and the building or purchase of public utility properties—admittedly lead to additional trade between the investing country and the country in which the investment is made. Such investment requires the modernization of plants and often the installation of entirely new equipment.

Equipment and Supplies Needed

For these purposes, equipment and supplies not manufactured in Latin America are needed, and such products are likely to come from the country which makes the investment.

The reasons are not hard to find. The executives in charge of the new plants tend to favor the purchase of equipment manufactured in their home country, since they have worked with it previously and know its merits. Other reasons for the home purchase of equipment arise from national self-interest, interlocking directorates, and the mere fact that equipment producers in the investing country can easily make contacts with the executives who are entrusted with decisions regarding purchases.

Again, there is no negative influence; that is, no existing trade is likely to suffer because these investments have been made. Any trade proceeding from the investment is likely to be a net gain. There can be little doubt, for instance, that the purchase of public utility properties by American and Foreign Power Co., Inc., and the acquisition of properties by the copper companies were beneficial to our trade with South America.

Direct Loans Not Always Productive

Direct loans to governmental units through the purchase of bonds may or may not be productive of trade. Of course, such loans may be tagged for specific types of expenditure, with an understanding that the proceeds of the bond issue will be used for purchases in the country which bought the issue. But, more usually, the proceeds are used to make up government deficits.

Perhaps foreign trade purchases were indirectly responsible for the deficits, but there is no assurance that the trade was with the country which paid the bill through the purchase of bond issues. Still, business contacts, national self-interest, and relationships between banking houses and business concerns were probably of sufficient strength to assure that the major part of the proceeds from bond issues which we absorbed was spent in this country and thus contributed measurably to our foreign trade. This fact is demonstrated by the growth of our trade with South America during the time that large numbers of Latin American bond issues were being placed in this country.

It is not so evident that the fourth type of investment, that in branch manufacturing plants, contributes to our foreign trade. In fact, a flat contradiction to the assertion that the establishment of branch plants increases our trade with a foreign area, might be forthcoming.

The American Federation of Labor and other labor organizations have openly stated that migration of industry through the placement of branch plants in other countries has caused a lesser volume of foreign trade, thus a lesser volume of employment, and so has proved a detriment to our workers. Because there is so much difference of opinion on this point, I wish to discuss it in some detail.

Part of General Expansion

First, it should be recognized that migration of industry from this country to Latin America, particularly to the ABC countries, is only a part of a general industrial expansion in those countries. There is probably no major section in the world in which there is greater industrial activity relative to pre-depression years than in temperate South America.

The Argentine textile industry has had a remarkable growth. During the past few years of world-wide industrial stagnation, an industrial boom has been a rarity indeed, but the Argentine textile industry has experienced a boom which has never been equaled in its history.

Notable advances have been made in other lines, as well. Manufacturing output has increased rapidly in pharmaceuticals, leather products, paper, containers of all types, furniture, and other products made of wood. Small iron and steel products, such as bolts, springs, batteries, cutlery, and home appliances, are likewise being manufactured.

It should not, of course, be inferred that all industry has been prosperous. The restrictions which South American countries have placed on imports have naturally not stimulated those concerns which did not formerly have to meet foreign competition. But in general, the ABC countries are constantly becoming more industrialized. The lack of essential raw materials will prevent their becoming highly industrialized, but they can produce and are producing many commodities which, prior to 1929, were almost entirely imported.

American Companies' Branch Plants

Let us note briefly the part which branch plants of North American concerns have had in this general industrial development. In 1933 there were 66 branch plants in the ABC countries and Uruguay. Twenty-nine of these were established in the 1920-1929 decade, and 21 in 1930 and thereafter.

Nor has the movement ceased. E. I. du Pont de Nemours & Co. has recently completed a rayon factory in Buenos Aires, and the Seiberling Rubber Co. has some connection with a new tire manufacturing concern in Rio de Janiero. In total, these 66 branch plants employ slightly less than 40,000 individuals.

It is true that about half of these are employed by the packing industry, which might be considered an expression of the pastoral activities of these nations rather than of the industrial activities, but, nevertheless, our branch plants have made a significant contribution to the industrial development of these nations.

Also, while many branch plants have been established during the past decade, and even since the beginning of the depression, the migration of industry has been a continuing movement over many years. There has merely been an acceleration since 1929.

The question which immediately arises is what effect this general industrial development has had upon our foreign trade with these countries. Many people look askance at industrialization elsewhere in the belief that as such industrialization becomes more complete, foreign trade will be doomed and the markets on which dependence has been placed will be irretrievably lost.

Foreign Industrialization Increases Trade

Of course that may be the result for certain concerns, but not, I believe, for foreign trade as a whole. The industrialization of any region, if it is economic in character, increases wealth and makes possible the importation of foreign products previously denied to the population.

I am convinced that much of the industrial growth in South America is economic in character, also that it is permanent and not merely a "flash in the pan." These markets have become "ripe" for certain types of manufacturing activity, and the general economic position of the countries is improved if local production is substituted for importation. Industrial growth is particularly important there because it helps to create a great middle-class population, which, in my opinion, is needed by all Latin American countries.

Undoubtedly, the commodities appearing in our foreign trade with those countries in which industrial advancement is taking place will be different as time goes on. The exportation of certain products will practically cease, as have the exports of automobile tires to Argentina since the Goodyear and Firestone companies established branch plants there in 1930, but eventually the exportation of other products will take their place.

Nor should it be assumed that the export trade in tires or other articles in which manufacture has begun would have continued unimpaired if United States companies had not established branch plants. The fact is that as the market became large enough to permit of local manufacture, some concern, local or European, if not North American, seeing the opportunity for competitive advantage, was likely to start manufacture.

If Goodyear and Firestone had not established plants in Argentina, it is likely that Michelin of France or Dunlop of England would have; in fact, they finally did so. In other case the market for tire imports, with the exception of odd sizes of tires, was gone.

The effect of foreign assembly, as contrasted with complete manufacture, has been to increase industrial output in this country rather than to decrease it. Some of the industrial process is shifted to the branch plant, but, on the other hand, demand is so stimulated by the lower prices to consumers which foreign assembly makes possible that the net result is to increase exports, and not to lessen them.

It is freely admitted by most observers that industry within this country has been stimulated, and not depressed, by the assembly within foreign countries of such products as automobiles and trucks, scales, elevators, and radios. Obviously, too, heavy industry in this country may be stimulated by a growing demand for machinery and equipment which are needed in the process of industrialization elsewhere.

There is room for difference of opinion, but I should anticipate that industrial growth in Latin America will ultimately lead to an increase in the foreign trade of that region and, furthermore, that our foreign trade will not suffer from such industrialization. I conclude, therefore, that foreign investment in the form of branch plants is complementary rather than antagonistic to our foreign trade, and that such investments will ultimately lead to heavier trade with the countries in which the investment is placed.

Future Investments Advocated

With the general conclusion in mind that all sorts of investments, including direct investments in manufacturing facilities, lead to heavier trade, let us consider briefly the likelihood of additional investments in Latin America. Regarding investment in branch plants, some comment has already been made. Apparently it is a continuing movement, and I should anticipate additional commitments unless something untoward happens.

Furthermore, other types of investment will again be made in Latin America, despite the lack of confidence which now prevails. Recently, a business executive stated in conversation that we had learned our lesson in regard to Latin American loans, implying, of course, that further loans would not be made because of our unfortunate experience with some of those in the 1920-29 decade.

In my opinion, if we learn such a lesson it may be a costly lesson indeed, particularly if we have the same attitude toward other types of investment. If we allow our present lack of confidence to prevail too long, we shall probably miss many excellent investment opportunities.

The basic condition for capital movements into Latin America has not changed. From an economic point of view, this is a backward area, and capital, being very fluid, has always been attracted to those areas which are particularly subject to economic development. The reason for this is not difficult to ascertain. Capital is more productive in such areas, and the rate of return to investors is greater.

What the English Did

A lesson on this question of foreign investment may be learned from English experience. The first English loan to the province of Buenos Aires in 1824 was defaulted within four years, although it was finally settled some thirty years later. England has invested heavily and not unsuccessfully in South America for a hundred years or more, yet every South American state has defaulted at least twice.

These states have, nevertheless, always been able to secure funds from abroad in later periods. If England had been entirely discouraged by defaults of loans and periodic unsatisfactory returns on other types of investment, many of its substantial returns on foreign investments would not have been realized. Moreover, the foreign trade of England would have suffered appreciably from such a short-sighted policy.

In all probability, foreign investment in Latin America will revive, unless the government of Latin American countries adopt an extremely antagonistic attitude toward all foreign interests. There has been some evidence of such an attitude lately, but it has been largely centered in two countries, and conditions appear to be more favorable now than they were a short time ago.

The situation in regard to old investments is improving, investors are less disheartened, and, with improvement, memories of previous difficulties soon become hazy.

For instance, many an American who was soundly whipped in the security market debacle of 1929 was again speculating in 1933. In all probability his memory of reverses in foreign investments will likewise fade, and when real opportunity presents itself, additional commitments will be made.

Our investments in Latin America are likely to revive with a revival in general economic activity throughout the world, and if they do we shall experience a notable increase in our foreign trade.

*Address before 23rd National Foreign Trade Convention, Chicago, Nov. 20, 1936.

Comstock Explains Plans for World Trade Fair and Tells Its Importance To International Commerce

By Louis K. Comstock,* President, The Merchants' Association of New York

American foreign trade is in a better position today than at any time since 1930. Our exports have increased 72% from the fiscal year 1932-3 to the fiscal year 1935-6. Our imports, very largely due to the demands of American manufacturing, have increased 90% during this time.

At the present time our foreign trade is increasing by more than 10% annually, or at about twice the average rate of the rest of the world. Recovery in our international business is making sound progress, and this is reflected in a better attitude toward foreign trade in every section of the country and by something approaching a minor boom in the foreign trade profession itself.

Benefits of Trade Agreements

None of us can speak too highly of the share in this notable advance that is attributable to the reciprocal trade agreements of Secretary of State Cordell Hull. I believe these agreements have been negotiated with a broad sense of the American interests at stake. They are already having practical and beneficial results in this country. But their greatest service is probably the encouragement they give to the world at large to resume international trade on a freer basis, with the assurance that the barriers to access of the world's market places can be lowered for the benefit of all nations.

But we still need more and more visualization of what foreign trade actually means to Americans and the countries with whom we trade. We need a central meeting place to which we can repair periodically to see before us the products of the foreign trade and services which carry it on. At this great meeting place of the National Foreign Trade Council you get a meeting place of facts and experience, a development of common policy, and a direct contact with foreign trade executives from all parts of the world.

World Trade Fair Promoted

But another meeting place will also be useful in which the operating atmosphere of foreign trade is visible in terms of the products we sell and buy abroad in the actual scenery and background in which they are used. That conception calls for a fair, and, as a supplement to the existing foreign trade promotion and propaganda in this country, we who are interested in the World Two-Way Trade Fair take this opportunity of informing you of its present beginnings and of interesting you in its future prospects.

International trade fairs, old enough in Europe and Asia Minor, have never yet made their appearance in America. The first international trade fair to be held in America is scheduled to take place in New York during the month of May, 1937.

The World Two-Way Trade Fair is a non-profit making enterprise spon-

(Concluded on Page 28, Column 1)

* Address before 23rd National Foreign Trade Conference, Nov. 18, 1936.

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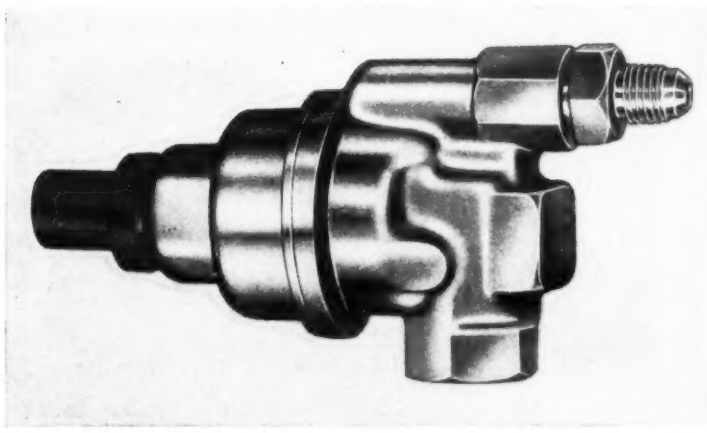

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World 2-Way Trade Fair Will Open May 10, 1937

(*Concluded from Page 27, Column 5*)

sored by representative leaders in the foreign trade community and assured of substantial government cooperation. It is being promoted by an organization, World Two-Way Trade Fair, which is incorporated under the laws of the State of New York. I have the honor to be its president; its vice presidents are James S. Carson and Frederick W. Nichol, both of whom are well known to you. Its board of directors include, besides the officers, Paul W. Alexander, E. W. J. Hearty, Henry Howard, Frederic C. Irons, Robert D. Merrill, Robert H. Sexton and James E. Sitterley. We have also what we believe to be a very sound advisory committee of foreign trade experts, a long roster of cooperating organizations most of which are represented at this meeting, and a list of eminent patrons.

We have now definitely set the date of the World Two-Way Trade Fair for the fortnight from May 10 to 22, 1937. The second week of the Fair will coincide with the observance of Foreign Trade Week throughout the country, and will close with National Maritime Day on May 22. The place will be the five acres of space comprised in Commerce Hall of the Port of New York Authority Commerce Building, in New York City, the largest exhibition space available under one roof in the United States.

Fair to be Promotional Aid

The World Two-Way Trade Fair will, we believe, in time become an enormously helpful supplementary medium in promoting our foreign trade. It will be a vital principle of the Fair to attract foreign buyers. We hope to be able to show them in one place and in one concentrated fortnight the cream of the products available in the United States for sale abroad. It will facilitate the introduction of new lines and new products. It will provide a new means of promotion for the moderate sized manufacturer. In the most graphic way possible it will enable all American exporters to compare visually and tangibly their latest products and services in foreign trade.

We have talked about our foreign trade progress for years without giving the American public an adequate opportunity to see the goods we sell. Let us get them out in the open; let us set these products up in the actual scenery in their service abroad, and I believe that not only the American public but the foreign public as well will get an understanding of the importance of our foreign trade they have never possessed before.

It is proposed by means of this fair to set up an international clearing house for world trade and naturally importing belongs very substantially in the picture. What distinguishes this Fair from others of its kind is our effort to bring also to this country graphic exhibits of the things we have to buy from other countries. In other words the Fair will impress upon all who see it the fact that international trade can only be carried on a two-way or triangular basis.

There will be official government exhibits from foreign countries, and there will be private exhibits from foreign firms. In both of these categories we have already made sufficient progress to insure a very large foreign participation. Representative committees are being set up for each important foreign country under the authorization of the board of directors and participation of each country will thus be under a representative group of business men acting for that country with the cooperation of their government. The exhibits will also include travel and tourist attractions, which are vitally important components of the international balance of payments.

Designed as National Enterprise

Naturally, the Fair will not merely comprise exhibits of products and raw materials; all the services of foreign trade are also expected to add their contribution to the complete picture, especially banking, credit, advertising, shipping, and warehousing, freight forwarding, codes, communications, marine insurance, and other indispensable functions of the world's foreign trade mechanism.

This is a national enterprise. That its first showing takes place in New York is the accident of birth and the conjunction of favorable circumstances. We look forward to the Fair becoming a permanent fixture in American foreign trade, held from year to year during the dates approximating the observance of Foreign Trade Week. In its present place on the calendar it follows the British Industries Fair which is held in February, and the Leipzig Fair which is held in March, and precedes the Paris Exposition in June.

Finally, beside our committees for foreign participation, we are setting afoot committees for participation by American ports and communities throughout the country, and for the special promotion of participation by American industries that shall adequately represent the whole country. Local committees will be formed in each section for this purpose.

We are embarking on a long range enterprise of considerable magnitude. All beginnings are difficult, but the fact that reassures us about the World Two-Way Trade Fair is that the beginning we have made has the hearty support and cooperation of the foreign trade profession which we aim to serve. We intend to spare no effort in the months that lie ahead of us to justify the confidence that already has been reposed in us. If our efforts are ultimately to be crowned by a success, the ultimate usefulness of the Fair will justify itself in terms of permanent and profitable advantage to the development of foreign trade, not only in this country, but wherever sound foreign trade is carried on.

Air Conditioning Most Popular in Industries In South Africa

JOHANNESBURG, South Africa—Air conditioning, only recently introduced to the South African market, is not yet popular outside of the industrial field, according to U. S. Consul Hugh S. Miller.

A number of firms are selling commercial air-conditioning equipment to the mines and other industries, but practically nothing has been done insofar as the domestic or office market is concerned, although Mr. Miller maintains that there is a great potential market in this field.

This market would not be easy to develop, he says, a considerable expenditure of time and energy would be necessary before substantial sales could be made.

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Farrell Discusses Factors Which May Influence Development Of International Trade

By James A. Farrell,* Chairman, National Foreign Trade Council, National Foreign Trade Association, Foreign Commerce Department Committee, Chamber of Commerce of the United States

The 17 years that have elapsed since the convention last met in Chicago cover a period that will pass into history as an epoch remarkable chiefly for the revelation it has brought of the economic oneness of the world, and of the dependence of the richest and most powerful nation on the economic stability and prosperity of other countries.

The European war continues to be spoken of as the World war, not because all countries were engaged in it, but owing to the fact that no nation escaped the economic consequences of that terrific impact upon a highly sensitive and extremely vulnerable world economy.

It was at the close of that exhausting conflict in 1919 that the convention met in Chicago. We were confronted then with problems of readjustment and reconstruction; with the task of converting the instruments of war to the arts of peace. We faced the future with unshaken confidence, in the belief that the ravages of the most disastrous war in human history would lead to years of unbroken peace. We adopted the scientific and technical developments which had been such potent instruments of military achievements, and which were to prove no less effective agencies in the strengthening and development of our industrial system.

Due to the constructive part played by the application of science to industry following the war, the United States forged ahead despite the difficulties created by a sudden transition from wartime production, to that of supplying the normal needs of peace-time.

The lesson had yet to be learned, however, of how to check the extra-prosperous years which, carried to excess, cause deflation and collapse of prices. The discipline of lean years was needed to bring home the truth that prosperity is a trust to be wisely used. No country can live unto itself. A world economy which is the slow and steady growth of the centuries fixes the limits wthin which national commercial and monetary policies may properly function.

International Accord is Essential

A hopeful sign of the times is the recognition by all countries that, whatever the difficulties that compel certain nations to pursue nationalistic policies, international accord on the fundamentals that determine world trade relationships is a condition essential to the complete restoration of the economic channels of world commerce.

The chief aim of all countries during the depression was to revive domestic production—foreign trade for the time being was of secondary consideration. The result is seen in the improvement in domestic conditions, as contrasted with the lag in international trade recovery. Industrial recovery shows marked progress in the United States, contrasted with the slower movement of foreign trade. It was only in 1935 that improvement in our foreign trade was more marked, although in terms of physical volume the gain represented less than a quarter of the loss sustained during the depression.

The statement is often made, that our improvement in foreign trade has been slower than that of British countries. This improvement in British trade is in inter-Empire transactions, increase in which is offset by decreases in trade with Europe. The Ottawa Agreements, representing a trend toward an exclusive economic grouping of nations, has yet to establish its claim to be a permanent solution of problems affecting the British Empire's share in world trade.

American business men see in the trade agreement with Canada recognition of the fact that, whatever temporary measures may be adopted for the stimulation of trade in a period of depression, in the end progress must be sought by keeping the door open to world trade.

The lag in international trade, contrasted with the progress now maintained in domestic recovery, is symptomatic of economic nationalistic policies that continue to impose restraints upon the exchange of goods and services. The bargaining powers of the United States constitute a chief influence in overcoming the remaining obstacles to the recovery of foreign markets.

Trade Agreements Praised

Viewed as an adjustment to our changed status as a creditor nation, the trade agreements will be found upon examination to be a logical method by which to increase our exports, with reasonable assurance of payment for these goods. While the change from debtor to creditor status came abruptly, it has taken two decades to adjust our mentality to this rupture with the deeply rooted tradition of a favorable merchandise balance of trade.

The basic principle of the American tariff law requires equal treatment for all countries that do not discriminate against American trade.

Trade is not an end in itself, but a means to an end—not only the maintenance at highest level possible of the standard of living of the people, but the levelling up throughout the world of standards by which both the material and spiritual needs of humanity may reasonably be realized.

To what extent and in what direction the disturbing influences of post-war dislocations have changed the character of the world economy is a question frequently debated. The tendency, however, to drift away from the world economy appears to have reached its pinnacle. The agreements with Canada and France, and subsequent developments in new currency alignment, seem to presage a return in substantial measure to the stable conditions of pre-war years.

'Buy at Home' Belief False

In estimating the effects of changes in the world economy, due to the spread of economic nationalism, we cannot but regard with satisfaction the failure of the "Buy-at-Home" school of economists in various countries to influence public thought in this direction.

Difficulty in comprehending the basic facts of international trade, or of any complex economic issue, exposes a democracy to the specious wiles of those who advocate plausible fallacies by appeals to the emotions rather than to reason. Discussion of the place of imports in our national economy, and the educational influence of the annual Foreign Trade Week, have simplified for the general public understanding of the indispensability of our foreign trade and of the fallacies of self-containment.

A major part of our imports constitute materials essential to manufacturing processes. The fabricated products of these manufacturing industries supplant to the extent of 90% of the entire domestic market the manufacturers of other countries made from similar foreign raw materials. The shutting out of these raw materials would transfer to foreign labor and capital the advantage we now possess of employing American labor and American capital in the manufacture of goods not only for the home market, but for foreign markets in which there is a demand for them.

There is considerable discussion as to the effects upon our future overseas trade of the industrial developments in countries which hitherto have been exporters principally of raw materials and farm commodities and importers of manufactured goods. One effect of the rise of these new industrial countries has been to increase our exports of machinery and equipment and all classes of heavy industries. The present tendency of these countries to develop their domestic industries by curtailing imports restricts the outlet for the products of older industrial nations.

Experience of the past shows, however, that trade is greatest between industrial countries because of the higher purchasing power of the industrial worker and that the movement of goods in international trade is affected but little by tariff barriers. With the elimination of prohibitive customs regulations, quotas, exchange restrictions, and other unreasonable restraints, especially those of a discriminatory character, American industry has little to fear in respect to competitive advantage in foreign markets.

Trend to Economic Nationalism

We cannot, however, shut our eyes to the fact that the trade routes of the world have undergone a change and that the immediate future presents difficulties which demand increased effort and enterprise.

The rise of economic nationalism in so many parts of the world has led many to inquire whether this trend is a passing symptom only of a temporary interruption of international commercial relationships, due to cumulative causes traceable to the war and intensified by the depression; or, whether this movement away from the pre-war international system of economic relations is fundamental and permanent.

The answer is to be found in the conditions prevailing today in those countries which have pursued a policy of economic nationalism, believing the change to be fundamental and lasting and one to which the United States and other countries would ultimately be forced to conform.

A prominent financier and statesman of one of these European countries, who is charged with the difficult task of steering his country through a maze of difficulties in the effort to secure an equilibrium of external trade, has recorded his views of the situation created by clearing and compensation agreements, based upon the fallacious theory of a bilateral balancing of trade.

His words are a scathing indictment of a nationalistic philosophy that belongs to the Dark Ages and which opposes obstacles to countries willing to trade. He says: "It is barbaric to be forced to barter machines for cereals, or radio apparatus for tobacco, like an African who exchanges his ivory for glassware, or his rubber for cotton cloth."

Nothing we might say more clearly reveals the folly of those who profess to discover in these nationalistic trends a new and more effective method of combatting depressions. Recovery has been slowest in countries that ignore the realities of our world economy and which seek relief by methods that have the tendency to reduce the total of world trade.

High Depression Levels Cited

There is encouragement in the thought that international trade in the depression years maintained a high level despite the leagued forces that were massed against the interprising trader. The volume of trade at the lowest point of the depression was only 30% below normal. In 1935, it was 24% lower than in 1929. The volume of world trade in manufactured goods last year is estimated at approximately two-thirds of normal years. While the sharp decline in prices reduced the value considerably, the relatively large movement of goods in spite of unprecedented handicaps is a significant reminder of the vitality of trade and of economic forces that offer powerful resistance to any excessive restraints upon it.

One of the most significant changes in international trade is the extension of governmental control in so many countries. The business world cannot remain indifferent to fundamental tendencies so far-reaching in their influence upon the future of international trade relations.

We in the United States cling tenaciously to the democratic theory of the individual initiative and individual enterprise, which in practice has brought our country to the front rank of industrial progress. International trade, fettered by political considerations that make for increasing national self-sufficiency in defiance of economic laws, loses its flexibility and freedom of movement when subjected to the rigidities of bureaucratic control.

Trade Must Have Freedom

This departure from the pre-war system of international trade relations has not benefited appreciably the countries that have forms of government in other countries, but we are deeply concerned with any influences that tend to render more difficult our trade relations with the rest of the world.

The present Shipping Act creating a Maritime Commission is definitely an important advance toward the restoration of an adequate and modern American merchant marine. Undoubtedly any provisions of the Act which are found unworkable will be modified to meet the conditions required in carrying on our overseas trade and in times of emergencies for the purposes of defense.

The shipping law as enacted frankly recognizes the disadvantages under which American merchant vessels have operated in the past, in competition with subsidized foreign shipping, and handicapped also by higher building and operating costs. It now remains for shipowners to do their part in building modern vessels and in cooperating to the fullest extent possible in bringing the American Merchant Marine to the high level of efficiency required to insure its rightful place in international commerce.

To accomplish this it is incumbent on American business and the travelling public to exhibit a more favoring spirit in the utilization of American ships when possible and to take justifiable pride in the revival of American traditions of the sea.

*Address before 23rd National Foreign Trade Convention, Nov. 18, 1936.

Banker Says Fixed Gold Content Is Necessary for International Monetary Stabilization

By Leon Fraser,* Vice President of the First National Bank of the City of New York

I take it for granted that you have suffered enough from instability and are eager to foresee the day when business may be transacted on its own merits, as it were, without being forever hampered, or rendered precarious, or even arrested, because of the absence of an enduring, stable monetary system between the principal trading nations.

The marvel is that so much travel and trade have moved across the frontiers despite the barriers that hem them in. What are the prospects and conditions of improvement; what is the new international monetary standard to be; what policies must America follow to help bring about general stabilization, and to preserve it, when attained?

We here are not alone in wishing for more settled conditions. While some cavil at exactly what they may mean by stabilization, informed opinion in every nation in the world, with hardly a dissenting note, is crying out for more freedom, and greater stability, in the exchanges. With such unanimity, why do we not achieve the desired result by the stroke of a pen?

It is because international monetary restoration is not merely a magic matter of free and easy choice. Monetary conditions reflect underlying economic and financial conditions. If they be not in sound balance within a country and between countries, then the monetary position will be out of balance also.

The inescapable preface to the monetary stabilization that all wish is the further attainment of equilibrium in the internal and the external economic and financial position of each of the principal nations, the stamping out of that limiting economic nationalism which is raising its head, and the further liquidation of the remains of the war and the post-war inflation, which was the fundamental cause of the world crisis and of the attendant break-down of the world's currency system.

Monetary Restoration Follows Recovery

Monetary restoration follows economic recovery and does not precede it; or more exactly, if you will, from out of the depths, economic and financial improvement and monetary adjustment both climb back, hand in hand, until normal equilibrium is resecured. That is the wholesome, constructive operation which is today taking place (and has been taking place) throughout the world—in some lands, such as our own and the sterling area, very rapidly; in others, such as Germany and countries where exchange restrictions prevail, gradually and slowly, but still steadily.

The first step is internal equilibrium; the second step is bringing your internal equilibrium, particularly as expressed in the exchanges, into line with that of the other principal nations; and the final step is stabilization at the equilibrium levels reached. Great progress is being made, but much remains which requires our patient realization that the goal we aim at, though nearer and already visible, still lies at the horizon.

The post war mistake of prematurely restoring the international monetary standard before the underlying internal economic conditions are healthy, and the external financial and economic relationships are in reasonable equilibrium, must not be repeated in our enthusiasm for quick return. We shall arrive most surely through proceeding in stages. The events of the past few weeks have advanced us to a vitally important *transition stage*.

Now at Transition Stage

I refer, of course, to the realignment by the gold bloc of their respective currencies toward an equilibrium level with the dollar and pound, and I refer to the identical declarations of the French, the British, and the American governments on that occasion. However valiantly they fought, for reasons of ethics, of pride, of principle, or economic belief, all the efforts of the gold bloc and of Italy to remain upon the plateau of a high gold valuation from which the rest of the world had retreated seemed foredoomed to the outcome which befell.

Yet, until it befell, we could not hope for practical progress in international action for the very reason that these regions were out of step with the major portion of the globe. That impediment is not only now removed, but we have the attendant heartening understanding of three major nations "to maintain the greatest possible equilibrium in the system of international exchanges and avoid to the utmost extent the creation of any disturbance of that system" by their own monetary action.

They declared that they would "use available resources to this and arrange for consultation between the governments and their authorized agencies." This assurance was shortly put into actual effect through the *modus vivendi* which Mr. Morgenthau has designed as "a new gold standard way of doing business—namely, the readiness in each of the three capitals to cede and receive gold at an agreed price to or from either of the others, with a view to flattening out fluctuations in the exchanges—an arrangement open to other nations to join.

The respective governments declared that "the success of the new policy was linked with the development of international trade" and stated that they attached "the greatest importance to action being taken without delay to relax progressively the present system of quotas and exchange restrictions, with a view to their abolition." A few days thereafter, France, Italy, Switzerland, and Czechoslovakia announced a lowering of import duties and an adjustment of quotas.

Recent Agreement Important

It is very easy to belittle this accord of Sept. 26, 1936; to point out that it is denounceable by either party on 24 hours' notice; that no fixed parity between the dollar and the pound is established; that each Government was careful to introduce a hedging clause about the necessity of "taking into full account the requirements of international prosperity"; that one searches the text of the declaration in vain to ascertain explicitly whether the stability of currencies said by it to be desired is fixation upon gold or upon price analysis to the professors. It is not the contractual force of the legal niceties of the arrangement that really count. The important fact for us business men is that it was politically, socially, and economically possible for the three nations to enter into a public agreement, later implemented by a working machinery, to the effect that exchange stability was a common aim.

Above all, the adherence of Great Britain was of splendid augury, because hitherto, and largely because of the obscurity about the gold bloc, Great Britain has been an uncertain factor in forecasting the turn of monetary developments. In effect, she has said, "Monetary *stability* but not yet stabilization."

That the present accord is vague in some particulars and not solemnly declared to be permanent and lasting, whatever circumstances developed, was but natural and prudent, because we must have a testing period, particularly as regards France, to determine whether its internal and external political developments there, proves to be in proper equilibrium, and can be held, at the revised exchange levels. Had not Great Britain and ourselves been already in approximate equilibrium, with the sterling and dollar rate at about present quotations, even this preliminary accord could not have been embarked upon at all.

Finally, the arrangement is to be greeted as a recognition of the fact that monetary stability internationally can only be had by international action and can only be maintained by continuous cooperation between the monetary authorities of the principal nations, who wish to preserve the same currency system.

The Coming Monetary System

What will the coming monetary system be? I have little hesitancy in replying—a reformed, modified, and managed gold standard which will take into account the fact that the pre-war world has vastly changed, so that the future gold standard must be less rigid to work satisfactorily, more flexible, more consciously directed, not content with focusing its gaze upon exchange rates alone, but ever attentive to the development of domestic economy, the local credit situation, interest rates, the fiscal position, and relative price levels.

But shortly the reformed gold standard, bettered by the stern lessons of the past and adjusted to the economic world in which we live, totally different from that wherein the old automatic standard functioned, will constitute a merging, as far as is practicable, of some of the concepts of a managed paper currency and of certain of the principles of the classic gold standard, endeavoring to reconcile and retain what is best and most suitable in each.

Two instruments for carrying out this difficult union will be:

First, the operation of exchange equalization funds, with gold being employed for international transactions only, which is its sole, rightful modern use; and with exchange fluctuations being kept within narrow limits by gold behind the domestic credit structure, so as not to bring about either deflationary or inflationary tendencies internally, unless the managing monetary authorities desire such a result.

The second instrument is the deliberate and coordinated administration by central banks and Treasury authorities of the supply of credit, of interest rates, and of monetary policy generally, with a view to preserving relatively constant price and business conditions in so far as the monetary element is a factor.

Under this hybrid system, which may endure for a considerable period, as we get closer to a more general international equilibrium, and progress away from economic nationalism, we can ultimately arrive at a *de jure* stabilization, in place of *de facto* stability. Complete and enduring exchange stabilization requires stable international conditions, political as well as economic. Surely we cannot honestly say that these solid prerequisites yet prevail.

In maintaining *de facto* stability and in attaining definite stabilization, much depends upon ourselves as the most powerful, single economic unit, whose every act has a repercussion upon our neighbors. The dollar is, and has been, stably anchored to gold for nearly three years and we have operated a modified gold standard internationally. I believe that the gold content of the dollar is definitely fixed and will not again be changed.

But, as things stand today and principally because of its usefulness as a bargaining instrument with other countries, I incline to the view that, pending still more progress in general stabilization, it is politic to extend the President's formal power, which expires next January, to vary the gold value of the dollar in any real emergency. It should be simultaneously stated, of course, that there is, in fact, no intention to exercise the formal power reserved, any more than it has been employed during the past three years.

Six Policies to be Followed

Besides the continuation of the present fixed gold content without change, there are six other policies we must pursue if international stabilization is to become a realty:

1. We must bend every effort to expand international trade, especially as regards imports. Before an increasing volume of purchases at better prices on the part of the wealthy economic nations, such as ours, the network of exchange restrictions will slowly fall, because their *raisons d'etre* will simultaneously disappear. Born of the crisis, they die with recovery. Secretary Hull's trade negotiations deserve, and I believe have, the approval of this Council. To talk of an international monetary standard without more and freer international transactions is to talk vanity. Economic nationalism and monetary stabilization are at mutually exclusive poles.

2. Sound monetary conditions demand sound fiscal conditions, and our government must gradually bring the national budget into balance, as must the state administration, also. We are going forward swiftly enough in internal economic restoration, so that a progressive balancing of budgets will not exercise a deflationary effect. Government finances and financing constitute the greatest single influence for evil or for good in the monetary situation of today.

3. We must avoid, and I believe we shall avoid, inflation, and we must stand ready to employ the many controls our authorities have to prevent such a world disaster. Similarly, if we do not wish to drain the world's capital and render stabilization almost impossible, we must not permit the development of a run-away stock market. Nothing would be more helpful to this end than a drastic alteration of the capital gains tax.

4. We must be resigned to leaving the war debts in their *status quo* or to readjusting them on the basis, say, of normal annual cash payments, coupled with a call in case of a great emergency, such as a nation-wide catastrophe—a call upon the debtor nations for the delivery to us of commodities and supplies of the character we shipped to them.

5. We must realize that the process we have followed at home of writing down debts and reducing interest rates, in order to liquidate the inflationary past and build for a new future, is equally applicable to international debts. It is the creditor who benefits by this facing of realities, because he thus recovers more on his claim than by standing on bare legal rights. With each country deliberately and successfully striving to lower interest rates internally, it is a paradox to expect the post-war high interest rates to be continued upon existing international loans.

The entry of such debtor countries as Germany and Hungary into any stabilization accord, with freedom of exchanges, so beneficial to all the world as well as them, will be long delayed unless a sensible and permanent adjustment is made of their high interest burden.

Should Encourage Debtors' Trade

Specifically, for example, it would represent economic progress if Germany would offer, and all the markets agree to accept, a refunding Dawes bond at 5% interest instead of 7%, and a Young bond at 4% instead of 5½%,—on the proviso, of course, that this was definitive, and effective payments assured. And we should encourage the world trade relations of our debtors, in order that they may enjoy the prosperity needed to meet their obligations.

6. While wisely abstaining from any participation in political affairs abroad, we must be prepared for a continuous, technical cooperation with the monetary authorities of the leading countries, in the joint task of operating and preserving the reformed gold standard, and of continuously studying changing economic and monetary developments, so that the application of the principles of the standard may be modified as experience shall prove desirable.

No international standard will be successful without international consultation. The existing understanding with France and Great Britain points the way, but in order to cooperate most efficiently and easily, our monetary authorities should occupy the seats reserved for them on the Board of the Bank for International Settlements, a non-political, technical institution, dedicated to the cause of more stable monetary conditions throughout the globe.

The ultimate goal of monetary stabilization is not an end in itself. It is but an instrument to complete that economic recovery which is on the rapid march. The advance is steady.

*Address before 23rd National Foreign Trade Convention, Nov. 18, 1936.

Appliance Imports Show Steady Rise In Singapore

SINGAPORE, British Malaya—American electric refrigerators and radios continue to show steady progress among imports of electrical equipment, according to U. S. Trade Commissioner Julian B. Foster.

Approximately 150 refrigerators have been imported monthly, and monthly radio imports are averaging 250 units.

Several orders recently have been received for air-conditioning equipment from the United States, and Mr. Foster believes that this equipment may soon form an important item.

Malayan imports of American electrical equipment totaled $530,041 for the first six months of this year, constituting 11% of all American shipments to Malaya. Electrical imports for the first six months of last year totaled $760,094.

Venezuela Raises Tariff On Electrical Items

CARACAS, Venezuela—Tariff rates on imported electric refrigerators and other electrical items were raised as a result of the Venezuelan customs tariff which went into effect in October, according to U. S. Commercial Attache Frederic D. Grab.

Following is a partial list of the new duties on products of principal interest to U. S. exports, stated in bolivares per gross kilo. Former rates are in parentheses: electric refrigerators, from .4 to .6 according to weight (0.1566); radio receiving sets, 3 to 5, according to weight (1.9569).

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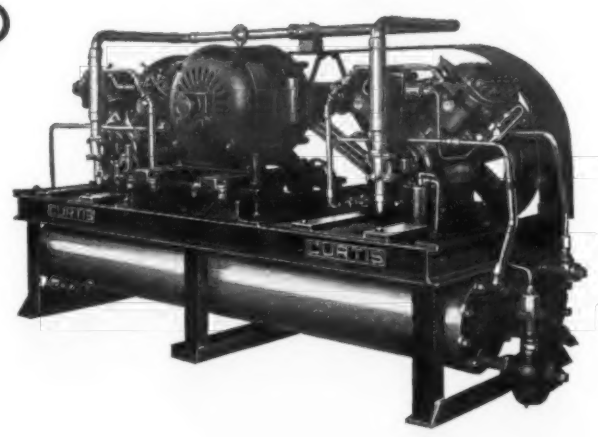

CURTIS

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Division of Curtis Manufacturing Co.
1912 Kienlen Avenue - - - - Saint Louis, Missouri

Carson Explains Workings of Commercial Arbitration in Latin-American Trade

By James S. Carson,* Vice President,
American & Foreign Power Co., Inc., New York City

For years we have looked to and cultivated the Latin American markets. The trade has grown until the inter-American exchange of goods is measured by hundreds of millions of dollars; but too often in the past, and frequently, but less often in this present, feelings of bitterness have been engendered by relatively little misunderstanding between the Spanish and Portuguese speaking merchants and our own men of business.

Just as much, and perhaps more, bad feeling may arise from small controversies as from big ones. It is just as important to effect a prompt and just settlement of a case involving only a few dollars as one involving many thousands.

Take, for example, the case of an importer in a small town in Nicaragua. He placed an order, amounting to approximately $150 with a firm right in Chicago, and paid in advance. Five months later he had not yet received the merchandise, notwithstanding repeated inquiries.

Finally he was advised that, because of strikes in the factory, there had been a delay in filling orders, but that his order would be completed and shipped shortly. After two more months the Nicaraguan wrote and asked for a refund of his money at least if he could not have the merchandise, which had still not arrived.

In reply he was advised that the merchandise would be shipped shortly. Another two months elapsed making in all 10 months, and no further word, merchandise or refund from the Chicago manufacturer. The Nicaraguan went to the U. S. Consulate for advice and was referred to the Inter-American Commercial Arbitration Commission.

Commission Query Brought Results

The Commission wrote the Chicago firm and also wrote the Export Managers' Club of Chicago; within one week a reply was received that the merchandise was being shipped and that, in order to make amends for the delay, the manufacturer was shipped a type of merchandise more recent and more perfect than that originally ordered. The merchandise was received in good order and the Nicaraguan importer expressed his satisfaction as follows:

"There can be no discussion regarding the aid to the peace and commerce of the American Nations as represented by the Inter-American Commercial Arbitration Commission."

A similar case, from Ecuador, also represents an example of a minor difference which was on the way to lead to bitterness and enmity. The importer had paid in advance for merchandise involving about $120. The merchandise was erroneously shipped by the exporter in the United States, and was addressed to Cuba instead of Ecuador. There was, of course, some delay until the error was discovered and the the exporter requested that the Ecuadorean importer pay the freight charges for the erroneous shipment.

The Ecuadorean obviously considered this an unfair demand, canceled his order and requested an immediate refund of his money. When the case was referred to the Inter-American Commercial Arbitration Commission there had been some acrimonious discussion and a good deal of bad feeling on both sides. However, it proved unnecessary to resort to arbitration; one letter from the Commission was sufficinet to bring about an agreement to refund and an amicable settlement of the dispute was reached.

Bringing Peace in Commerce

It is repeating a truism to say that all business men want peace and good will in trade and commerce, both at home and abroad; yet many of them have never carefully studied the significance of arbitration in helping to bring about these desirable results. To some men of business the term arbitration connotes the idealistic efforts of the advocates of the universal brotherhood of man, and they are astonished when the practical aspects and accomplishments of commercial arbitration are pointed out to them.

The progress made in this work in the United States, particularly during the past 10 years, has been so marked and encouraging that it has induced a group interested in inter-American trade to advocate the extension of the system to include all of the republics of the Western Hemisphere. By this it is not meant to imply that arbitration as a means of settling business disputes has not nor cannot be resorted to in the older European countries; but the facilities for carrying on this most important phase of commercial relations under standardized and legally binding rules has never existed.

With this in mind the Inter-American Commercial Arbitration Commission was established a little over two years ago. The Commission at the present time comprises 59 members representing 19 of the American Republics.

For more than 20 years the subject of inter-American commercial arbitration has been discussed. In 1915 at the First Pan American Financial Conference which met in Washington, the idea was endorsed. In 1931 the Fourth Pan American Commercial Conference was held in the same city and a resolution was adopted calling for a thorough inquiry as to "the possibilities of the commercial interests of the American Republics joining with the commercial interests of other countries in the support and active use of a system of arbitration."

Inter-American Agency Formed

The report of the survey which was published under the title "Commercial Arbitration in the American Republics," was submitted to the Seventh International Conference of American States which met in the city of Montevideo in December, 1933.

As a result, a resolution was passed by that body calling for the establishment of an inter-American agency, independent of official control, to assume the responsibility of establishing an inter-American system of commercial arbitration.

The organization of the inter-American system rests on the following seven fundamentals:

1. A constitution governing the activies of the Commission itself, defining its purposes, powers and duties, and authorizing the necessary subcommittees.

2. The appointment in each Republic of a Local Administrative Committee, acting under the Commission.

3. The establishment in each Republic of panels or arbitrators to form the nucleus of an Inter-American Tribunal.

4. The formulation and adoption of standard rules of procedure to govern the proceedings in any Republic.

5. The promulgation of a standard arbitration clause to be used in inter-American commercial contracts.

6. The amendment of arbitration laws, wherever this appears desirable, so as to bring about greater uniformity in the legal enforcement of arbitration agreements and awards, in accordance with the standards approved by the Seventh International Conference.

7. The education of business men, lawyers, organizations and others associated with inter-American trade in the use of arbitration as a means of settling commercial controversies arising in the course of commercial and financial relations.

How the System Works

The system is yet so new that actual operation of tribunals in Latin American countries must await numerous preliminaries. The Standard Arbitration Clause of the Commission leaves open, for the parties to determine, the Republic wherein the arbitration is to take place.

When a controversy arises, the party demanding arbitration notifies the local committee in such Republic, or if such committee is not yet functioning, he notifies the headquarters of the Commission and the facilities of the Tribunal are immediately made available.

The method of selecting arbitrators may be specified by the parties, but if no such method is specified, the Arbitration Committee, subject to the governing arbitration law, will nominate, from its Panel, qualified persons and send identical lists of such selections to both parties to the controversy.

The parties may eliminate from such lists one-third of the names without giving reason for such elimination, and any additional names for stated reasons. From the names remaining on both lists, the Arbitration Committee then selects the required number of arbitrators. According to the Rules, such number must always be uneven.

Hearings may be either verbal or by correspondence, according to the preference of the parties and the distance involved. Awards are by majority vote and are rendered within 30 days from the date of closing the hearings (unless such time is extended by mutual agreement of the parties).

Under this system all administrative details are taken care of by the Commission (or its local administrative committee), so that parties are relieved of all responsibility except that of presenting their case and evidence. A special advantage of these rules is that the procedure is uniform in all of the American Republics, insofar as the arbitration laws permit.

Hopeful Progress Reported

Hopeful progress has been made in Argentina, Brazil, Chile, Columbia, Guatemala, Haiti, Mexico and Venezuela. In the United States the Commission took over, as the nucleus of its Local Committee and Panel of Arbitrators, the Inter-American Commercial Arbitration Council and Panel, established by the American Arbitration Association, Inc., in 1931.

These lists have been amplified by nominees from foreign trade organizations in the leading cities, so that the Committee now has 85 members (in addition to the 25 members of the Commission resident in the United States who automatically become members of the Local Committee), and 205 members on its Panel.

As to the operations now being carried on under existing conditions the Commission is frequently requested to adjust controversies which arise in transactions not covered by a written contract, or where a contract does not provide for arbitration.

It has been asked to obtain an adjustment on such indefinite matters as the value of services of a self-appointed salesman, who succeeded in obtaining orders, but had made no arrangements as to commissions; the responsibility for shipping charges for the catalogs of a large exporting house in the United States, which had sent a supply of catalogs by courtesy, at the request of the South American importer; the claim of the citizens of Managua, Nicaragua, against seven insurance companies, for losses resulting indirectly from the earthquake of 1931, and other such matters.

Sometimes, through the inquiry and the resulting correspondence, it is possible to include arbitration provisions in written contracts, so that a controversy could be referred to arbitration immediately when it arises, invaluable time and good will would be saved.

Merchants Urged to Cooperate

The important and compelling work of the immediate future is educational. We need the help, both moral and material, of the business men of the three Americas. Use in all your contracts the standard clause for inter-American business. It reads as follows:

"Any controversy or claim arising out of or relating to this contract or the breach thereof, shall be settled by arbitration, in accordance with the Rules, then obtaining, of the Inter-American Commercial Arbitration Commission. This agreement shall be enforceable and judgment upon any award rendered by all or a majority of the arbitrators may be entered in any court having jurisdiction. The arbitration shall be held in ——— or wherever jurisdicition may be obtained over the parties."

As the legal effectiveness of a clause may depend upon the ability of the appropriate court to obtain jurisdiction over the parties, it is suggested that the clause include an additional provision in which the party or parties shall name an attorney-in-fact residing within the Republic whose laws govern the arbitration to accept service papers in any arbitration proceedings authorized under this agreement.

The stake is worth all of the effort. An arbitration clause in a contract offers the basis for a settlement that often never finds its way to the Arbitration Tribunal; the mere knowledge that arbitration is available gets many a shipment of goods out of a warehouse without resort to arbitration; the fact that leading citizens of the highest integrity stand ready to adjust controversies amicably, disposes of some of the fear that attends business between strangers not having a common language and facing the need for friendly interpretation.

The system which the Inter-American Commercial Arbitration Commission is building is in accordance with internationally recognized principles. It aims towards a uniform system, a standard procedure under simplified uniform rules and supported by harmonized arbitration laws. It may well be that the system now in process of development by the Commission will serve as an example to be followed by the rest of the world. This is a step in the direction of that universal harmony for which men have been groping throughout the ages.

*Address before 23rd National Foreign Trade Convention, Nov. 20, 1936.

Exports of Electric Refrigerators

July, 1936, Shipments Reported by the Bureau of Foreign and Domestic Commerce, Washington, D. C.

	Electric Household Refrigerators Number	Electric Household Refrigerators Value	Electric Commercial Refrigerators Up to 1 Ton Number	Electric Commercial Refrigerators Up to 1 Ton Value	Parts for Electric Refrigerators Value
Austria	48	$ 3,322	8	$ 395	$ 2,761
Azores & Madeira Islands	3	227	...	...	...
Belgium	204	12,656	121	10,104	8,862
Bulgaria	4	322	...	...	776
Czechoslovakia	15	1,214	1	454	2,693
Denmark	...	...	...	...	424
Finland	78	6,507	16	1,609	6,647
France	942	65,625	1,038	68,947	65,088
Germany	3	207	...	...	686
Gibraltar	16	1,420	1	125	402
Greece	24	2,504	2	140	1,834
Hungary	1	75	...	...	409
Irish Free State	1	99	...	...	418
Italy	4	298	12	3,847	2,217
Lithuania	3	283	...	...	...
Malta, Gozo & Cyprus	1	159	...	...	...
Netherlands	418	31,117	144	10,878	8,540
Norway	198	15,543	13	1,493	7,103
Portugal	12	1,108	10	1,102	181
Rumania	38	2,507	1	66	1,764
U.S.S.R. (Russia)	11	1,095	...	...	28,754
Spain	146	10,259	8	1,352	1,429
Sweden	161	12,530	45	5,811	11,068
Switzerland	177	12,719	1	85	2,963
Albania	7	623	...	...	...
United Kingdom	2,302	114,774	336	19,972	91,063
Yugoslavia	...	...	7	728	1,814
Canada	1,548	74,190	147	12,866	78,658
Costa Rica	9	821	...	...	955
Guatemala	23	1,788	3	320	94
Honduras	8	541	...	...	190
Nicaragua	2	199	...	...	12
Panama	111	13,011	21	4,507	2,062
Salvador	10	1,315	...	...	66
Mexico	593	48,727	36	5,029	7,631
Newfoundland & Labrador	17	1,762	2	352	534
Bermuda	59	5,327	4	632	868
Barbados	8	851	...	...	181
Jamaica	11	1,313	...	...	131
Trinidad & Tobago	19	2,122	1	91	374
Other British W. Indies	3	265	...	...	33
Cuba	465	40,966	28	2,975	7,696
Dominican Republic	18	1,577	1	195	151
Netherland West Indies	119	10,166	7	1,166	1,144
French West Indies	6	505	3	288	82
Haiti, Republic of	22	2,119	2	233	17
Argentina	1,524	62,946	167	11,735	42,045
Bolivia	5	641	...	...	...
Brazil	350	28,596	82	8,697	12,580
Chile	29	2,069	1	25	266
Colombia	442	39,213	23	3,932	1,350
Ecuador	30	2,702	...	...	41
British Guiana	9	674	...	...	60
Peru	27	2,279	1	929	841
Uruguay	14	1,403	43	5,196	2,022
Venezuela	209	17,177	18	2,875	981
Aden	4	355	2	357	130
Saudi Arabia	1	97	...	...	...
British India	403	27,917	15	1,527	8,219
British Malaya	142	13.580	12	1,476	2,292
Ceylon	37	2,919	...	...	150
China	29	2,462	2	259	642
Netherland India	225	18.350	25	4,529	4,544
French Indo China	49	3,851	...	...	3,361
Hong Kong	37	3.729	...	...	1,340
Iraq	15	2,348	2	60	141
Japan	18	2,383	7	1,065	4,680
Palestine	205	15,472	38	4,017	7,081
Philippine Islands	234	21,678	22	5,373	6,384
Siam	48	4,113	...	...	76
Syria	26	2,675	7	1,216	569
Turkey	13	954	22	3,472	1,249
Australia	884	44,507	29	1,113	20,731
British Oceania	1	85	...	...	...
French Oceania	7	553	...	...	52
New Zealand	205	15,834	130	12,270	5,124
Belgian Congo	8	1,174	...	...	47
British East Africa	3	671	...	...	618
Union of South Africa	4,083	335,152	89	10,292	22,087
Other British South Africa	4	517	...	...	16
Gold Coast	47	3,829	...	...	876
Nigeria	1	145	...	...	183
Other British West Africa	3	351	...	...	89
Egypt	15	1,417	6	2,774	696
Algeria	183	14,187	25	2,209	383
Tunisia	85	6,861	7	733	764
Madagascar	3	135	...	...	...
Other French Africa	149	11,697	...	...	536
Liberia	...	...	...	...	1
Morocco	126	10,847	...	...	868
Mozambique	79	5,518	...	...	116
Canary Islands	14	1,094	...	...	50
Other Spanish Africa	9	585	...	...	50
Total	**17,912**	**$1,240,500**	**2,794**	**$241,893**	**$503,109**
Shipments to: Hawaii	481	47.881	7	1,114	7,414
Puerto Rico	567	54,586	58	7,786	5,210
Virgin Islands	4	407	1	115	182

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Manufacturer's surplus stock high grade 1936 refrigerator cabinets ready for units — at low prices due to moving our plant to Galesburg. Ill.

4-FOOT MODELS—DULUX FINISH
Quantity—31

5-FOOT MODELS—DULUX FINISH
Quantity—127

6-FOOT MODELS—DULUX FINISH
Quantity—122

6-FOOT MODELS—ALL PORCELAIN
Quantity—15

8-FOOT MODELS—ALL PORCELAIN
Quantity—15

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● Shelf-X can give your refrigerators more sales appeal. Modern refrigerator buyers demand Shelf-X shelving because it does away with tipping of dishes (make the sliding cup test and see for yourself) Shelf-X also helps end dropping of food. Shelf-X is neat, sanitary and easy to keep clean. Write Department 21-ER today for a free sample and full details.

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Household Refrigerator Mfr. has sales territories available for proven sales producers capable of earning $10,000 a year or more. Exclusive territories with established accounts, direct percentage arrangement to insure you greatest possible earnings.

Rush references, lines handled, territory covered, earnings last 3 years and when you can start producing.

H. A. D'Arcy (Personal)
Domestic Sales Manager
Universal Cooler Corp.
Detroit, Mich.

Air Conditioning

Tests on Operation of Air Conditioning System by Natural Gas Power Being Made by Atlanta Utility

ATLANTA—To test the feasibility of operating an air-conditioning system with natural gas power, and to scale the operating costs for such a system, the Atlanta Gas Light Co., has installed gas powered air-conditioning equipment to cool its president's office, two other private offices, and a reception room.

Equipment installed includes a Freon-12 condensing unit (without motor), a model C-608 unit air conditioner with decorative casing, a forced draft cooling tower, and a condenser water pump. The cooling water serves both the condensing and gas engine.

The compressor is driven by a Red Seal automatic gas engine operating on gas supplied by the utility. Speed of the engine, 1,000 r.p.m., is reduced by suitable pulley sizes to drive the compressor at approximately its standard speed.

A separate belt from the engine drives the fan of the forced draft cooling tower, and the condenser water pump which was installed on the compressor base in place of the usual electric motor.

Operation Is Entirely Automatic

Operation of the system is entirely automatic. A high and low temperature thermostat, and a humidistat, control the starting and stopping of the gas engine by means of a six volt control circuit. This circuit takes its energy from the engine's storage battery.

In the three months period that the system has been installed, meter on the equipment recorded the consumption of 55,000 cu. ft. of natural gas, according to E. P. Kramer, industrial engineer of the Atlanta Gas Light Co., in charge of installation.

Mr. Kramer estimates that the compressor engine was operated 430 hours during the period. This figure is higher than it normally should be, he believes, because the system was operated longer than regular office hours.

System Needs Little Attention

Storage battery and lubricating system on the gas engine were the only parts of the system which required attention since it has been installed, the engineer states. The generator has been set at a sufficiently low charging rate to maintain a constant charge and eliminate the need for adding water to the battery.

To eliminate this servicing, Mr. Kramer plans to provide an additional two quarts of lubricating oil in the automatic feeder on the engine.

Providing for quiet operation, a small amount of insulation was placed between the engine base and the slide rail, and an insulating wall and ceiling installed. The compressor itself is not insulated. Equipment is installed on the basement sales floor, but no operating sounds are noticeable in the sales areas.

York Ice Machinery Corp. installed the equipment for this installation.

Air Conditioning of Industrial Processes Effects Savings in Production Costs, Carrier Tells Conference

WELLESLEY HILLS, Mass.—As long ago as 1930, air conditioning was effecting an annual net saving of $16,000,000 to industry, largely as a result of economies in production, Willis H. Carrier, chairman of the board of Carrier Corp. told the Annual National Business Conference here recently.

"In textile mills it improves the production from 3 to 5%. In silk mills it improves the production as much as 16% during certain seasons," he added.

The manufacture of rayon is wholly dependent on air conditioning. This is true also in the making of confectionery, and it is a valuable aid in the manufacture of ceramics. The use of air conditioning is practically universal today in all plants where tobacco products are manufactured.

Conditioning Pays for Itself

"In industrial installations, it is found that air-conditioning equipment will pay for itself in from a few months to four or five years. The average installation will pay for itself every two years in increased profits," Mr. Carrier added, citing examples for each industry.

A summary of experiences in the use of air conditioning, he said, shows increased patronage and the retaining of business in the face of competition from other air-conditioned places. "Restaurants have shown an increase sufficient to pay six times the total cost of owning and operating the equipment.

"Air conditioning for an office building costs from 18 to 25 cents per square foot to own and operate," Mr. Carrier stated. He showed a graphic chart for determining the investment return on the cost of air conditioning office buildings.

From the past profitable experience in industry and business, air conditioning in the future, Mr. Carrier predicted, "will see the development for personal comfort and health in private offices and particularly homes.

"It may even have effect in making winter vacations more popular than summer vacations and in turn materially affect peoples' habits."

Reviewing the growing acceptance of air conditioning, Mr. Carrier continued: "It seems safe now to predict that for some time, at least until the peak of sales has been reached, business may be expected to double about every three years.

"I would be inclined to predict an annual volume of sales in this field for 1948 of more then one third of a billion dollars.

People today know more about air conditioning, and their disappointment will be correspondingly more keen if their expectations in making purchases are raised above the possibilities of performance."

Mr. Carrier emphasized the great economic significance of the development of evaporative condensers, which require only 5 or 10% of the water ordinarily used directly for cooling. In this connection, he commented:

"These condensers are saving over one billion, eight hundred million gallons of water per year, or sufficient to supply the needs of a city of 50,000 population. While the water problem for air conditioning looms large, actually it is no longer a problem."

Power Load Doubles in 3 Years

"The power problem will become one of considerable magnitude, although easily met. At the beginning of 1936, the total connected load was approximately 511,000 horsepower; the 1935 increase being equal to the increase of the two preceding years combined. Apparently this load is doubling every three years."

Based on his quarter century in air-conditioning research manufacture, Mr. Carrier offered evidence of the advanced state of summer air-conditioning equipment, reminding his audience "cooling is an old art, already developed to a high state of mechanical effiiciency.

"Heat transfer surface has been highly perfected. The effiiciency of equipment already is high." He was enthusiastic about the possibilities for the future in the promising refinements that are being made in design and manufacture.

Mobile Bank to Condition Two Buildings

MOBILE, Ala.—Plans are being prepared by the First National Bank of Mobile for the air conditioning of two buildings owned by it at a cost of $125,000. Leo S. Weil and Walter R. Moses, New Orleans, are the engineers. About 350 tons of refrigeration will be required.

Airtemp Opens Office At St. Louis

ST LOUIS—Airtemp Products Inc., division of Chrysler Corp., recently opened a local branch office at 3717 Washington Ave. The new Airtemp branch is under the direction of Victor E. Hugoniot, who is in charge of application engineering. H. W. Buschman is merchandising manager.

Delco-Frigidaire Corp. Appoints Distributor For Baltimore Area

BALTIMORE—Oil Burners Distributing Co. has been appointed exclusive distributor in this territory for Delco-Frigidaire air conditioning products, according to officials of Delco-Frigidaire Conditioning Corp., division of General Motors.

G. Fred Schuman, formerly sales manager for Air-Conditioning Carey, Inc., and sales supervisor for the Baltimore air-conditioning division of Frigidaire Sales Corp., has been appointed sales manager for Oil Burners Distributing Co.'s new Delco-Frigidaire line.

S. Yeardley Smith, previously with Air-Conditioning Carey, Inc., is now air-conditioning engineer for Oil Burners Distributing Co.

J. J. Bouis, also formerly associated with Air-Conditioning Carey, Inc., has been appointed sales representative for the air-conditioning division of Oil Burners Distributing Co.

Oil Burner Show to Open March 15

PHILADELPHIA—The 1937 National Oil Burner and Air Conditioning Exposition will be held in the Commercial Museum here during the week of March 15 to 19, C. F. Curtin, exposition manager of Oil Burner Institute, has announced.

These shows have been sponsored by the Institute and its predecessor, American Oil Burner Association, annually since 1923.

The exposition will be open to the public from 1:30 to 10 p.m. throughout the week, Mr. Curtin announced. Admission is free.

Pointing to the increasing acceptance of oil-burning equipment for heating, cooking, and power, as well as of oil-actuated equipment in the winter air-conditioning field, Mr. Curtin said that oil burner sales this year will be 40% greater than those of 1935.

Gar Wood Appoints 11 Pacific Coast Dealers

DETROIT—Appointment of 11 new dealers for the Pacific Coast territory has been announced by Frank H. Dewey, manager of the air-conditioning division of Gar Wood Industries, Inc.

They are: Washington—A. H. Ershig, Bellingham; Hellenthal's Inc., Seattle; Leichnitz-Johnson Co., Yakima; Morris Hardware Co., Wenatchee; Paulsen Oil & Burner Co., Vancouver; W. R. O'Rourke Plumbing & Heating Co., Walla Walla.

Oregon—Casper & Cutler, Inc., Salem; Wm. Montgomery Co., Bend; D. R. Munro & Son, Portland; W. H. White Electric Co., Eugene.

Horabin Oil and Burner Co. was appointed dealer in Palo Alto, Calif.

Buffalo Forge Licensed Under Patents of Auditorium Corp.

BUFFALO—Buffalo Forge Co., local manufacturer of fans, washers, and air-conditioning equipment, has been licensed under all the patents of Auditorium Conditioning Corp.

Buffalo Forge may now sell and install Auditorium central station air-conditioning systems, or give others permission to do so. It may also manufacture and sell air-conditioning units utilizing the patented features of these Auditorium products.

11 Air-Conditioning Dealers Appointed by York

YORK, Pa.—Eleven new distributors of commercial refrigeration and air-conditioning equipment have just been appointed by the commercial division of York Ice Machinery Corp.

They are as follows: Milburn Refrigeration Co., Kalamazoo, Mich.; Seuser Co., Albert Lea, Minn.; York Refrigeration Products Co., Lansing, Mich.; Payne Motor Sales Co., Danville, Va.; Edward Joy Co., Syracuse, N. Y.

Others appointed, are: Chas. C. E. Harris, Boston; Johnson Furniture Co., Shreveport, La.; Refrigerating Equipment and Service Co., Santa Rosa, Calif.; R. M. Wolf Co., Lincoln, Nebr.; Household Appliance Co., Sioux City, Ia., and Shelden Gordon, Wilmington, Del.

Leeds & Northrup Opens Hartford Branch

HARTFORD, Conn.—Leeds & Northrup Co., manufacturer of recording instruments with headquarters in Philadelphia, has opened a branch office at 804 Judd Building here.

DISTRIBUTORS WANTED
for KOCH Commercial Cabinets
WRITE FOR FULL INFORMATION STATING QUALIFICATIONS
Koch display cases are thoroughly insulated with 4-in. corkboard. Triple plate glass and triple coated porcelain are Koch standards.
SOME VERY GOOD TERRITORIES STILL OPEN
KOCH REFRIGERATORS
North Kansas City, Mo.

DISTRIBUTORS WANTED
Percival equipment meets every requirement of the modern food store.
For mechanical refrigeration only.
Percival's complete line of display cases, reach-in refrigerators, walk-in coolers, chests, etc. will increase your sales of electrical refrigeration equipment and offer added earnings.
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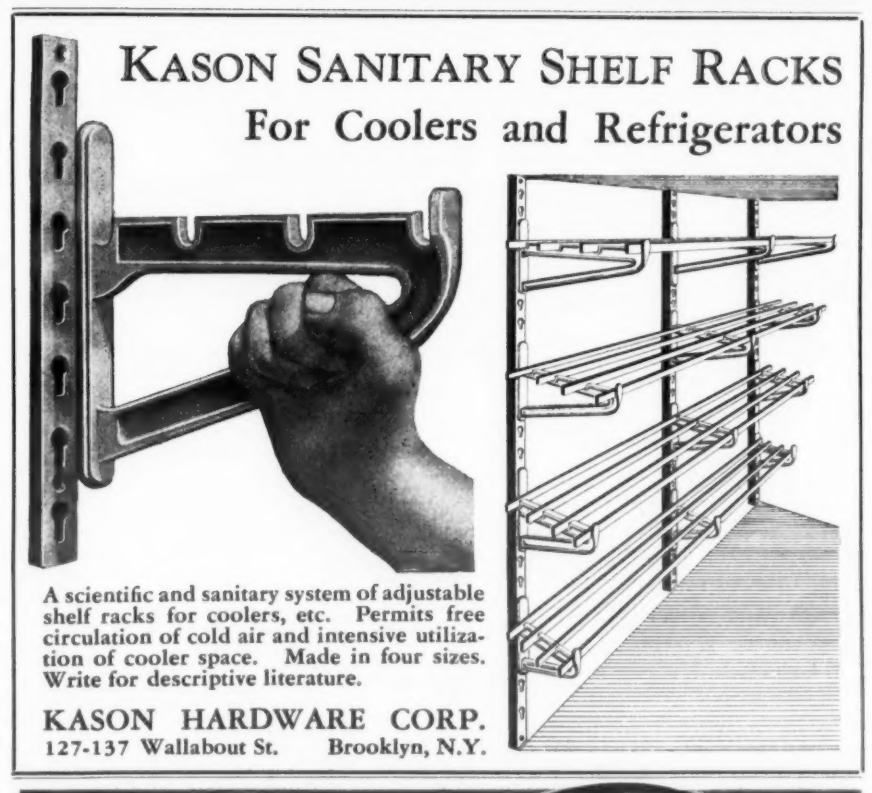
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The Buyer's Guide

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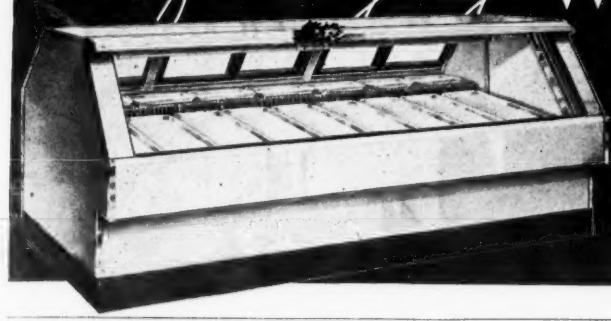

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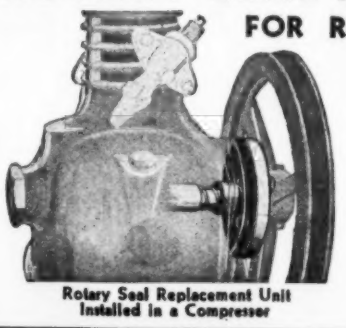

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Air Conditioning Made Easy

By F. O. JORDAN

Advantages & Disadvantages of Types of Heating Systems

SECTION NO. 7
Heating

Foreword

The purpose at this time is not to compile a handbook for use in designing the entire heating system, since the field engineer is not expected to function as a consulting engineer in the heating field.

However, the field engineer frequently will be confronted with the problem of connecting his equipment into existing systems. It seems obvious that a general working knowledge of common heating practices and systems will be of assistance in arriving at a satisfactory solution of such problems, and it is for the purpose of imparting such knowledge, that this discussion is presented.

Actually, there is nothing mysterious or complicated about the heating business. Some type of heat exchanger (such as a boiler, furnace, etc.) must be employed which can impart sufficient heat to the steam, water, or air which is used as the heating medium.

A distribution system of piping or ducts must be provided by means of which the heating medium will be distributed in sufficient quantities and at the proper condition to maintain the desired temperature at the desired place.

Such details as prevention of "air binding," "water logging," "air stratification," etc., must be given very serious consideration.

In the diagrams and descriptions which follow, the various general types of systems are described. Many variations of these general types are on the market, each having its own individual trade name, and being backed by some specialty manufacturer who makes optimistic claims regarding the unique characteristics of his "system."

Since about all that a heating system can do is to heat the building, its value may logically be based upon its success or failure in this function. Since heating equipment generally is judged upon this basis, it behooves the field man to study the following pages, carefully, and install heating equipment so that it will heat.

In general, heating systems may be divided into three classifications, steam, water, and hot air.

Steam

The steam heating system is one of the most popular, as it is not necessarily costly, yet it gives very satisfactory results when properly designed.

To be right, the system must have the following characteristics:

1. As a matter of course, the system must be ample as to boiler capacity, radiation, and piping distribution system.

2. The system must be designed so that it cannot become air bound.

The presence of air within radiators or heating coils reduces their capacity or entirely stops them from heating. Since air will enter with the steam, some means must be provided for evacuating it. Either a type of return must be used through which the air will be taken, or the radiator must be provided with some type of air vent.

Presence of air pockets within the return system reduces its efficiency, or completely stops the flow of condensation, and may cause "water-hammer." To prevent the formation of air pockets, the piping must be given a good pitch, preferably in the direction of condensate flow. To allow the air to escape from the system, the returns must be run to a vented receiver, or provided with some type of automatic air eliminator before going to the boiler, or before dropping below the level of the water line, unless some type of vented return pump is used.

3. The system must be designed so that it cannot become "water-logged," or so that quantities of condensate cannot accumulate, or lie in radiators or piping. The design and installation must be such that condensate passes rapidly and freely through the system to the boiler at all times.

The presence of condensate within radiators or coils reduces their capacity, or entirely prevents them from heating. The arrangement must be such that the evacuation or condensate is positive at all times. The presence of condensate within steam or returning piping reduces their efficiency, and may entirely prevent them from functioning. Furthermore, a water-logged condition produces "gurgling" sounds and "water-hammer," especially in steam lines.

To prevent water-logging in piping, the pipe must be given a good slope (1 inch per 10 feet of run) in the direction of flow where possible, and "step-ups" must be avoided. This rule *must* be adhered to at all times in case of dry returns, although it is not so important with wet returns.

Where unavoidable, or for short run-outs to risers or radiators, steam lines may be sloped against steam-flow, provided that the pipe size is increased one nominal size above that listed in the tables in the data section, and that the slope is not less than 1 inch per 4-inch run.

All steam lines must be dropped at all low points, at all step-ups in horizontal runs, at the ends of all runs, and at the high pressure sides of all automatic control valves, unless the slope at such valve is against the steam flow.

4. The system must be designed so that condensate will be returned to the boiler.

This requirement demands that a pump must be provided for returning the condensate to the boiler, or else the lowest radiator or coil must be located at a sufficient height above the boiler water line that the water head between the bottom of such coil or radiator and the boiler water line is sufficient to return the condensate to the boiler against the pressure drop in the return system plus the pressure differential between the steam pressure in the boiler and the steam pressure at the radiator.

5. All pipe lines and connections must be arranged so that there is no strain due to expansion and contraction, in order to prevent breakage and leaks due to such strains.

Hot Water

The hot water heating system is very generally used, especialy in certain sections of the country. Its principal advantage lies in the fact that the temperature of the water in the system may be varied over a considerable range as necessary to suit varying outside temperatures.

For this reason the capacity of the hot water system may be regulated to suit the existing load, with the result that even temperature distribution may be achieved, and overheating in mild weather may be avoided.

The principal disadvantages lie in the fact that the output of the system does not tend to change quickly to meet quickly changing loads due to the large body of water in the system which must be heated or allowed to cool in order to vary output, and in the fact that the system must be very carefully laid out and very accurately sized in order to obtain proper circulation of hot water under all load conditions in all portions of the system as required.

Slight errors in design or installation may cause "short-circuiting" of hot water around some portion of the system with the result that such portions will not heat. However, the hot water system is very satisfactory if properly designed.

To be properly designed, the system must have the following characteristics:

1. As a matter of course, the system must be ample as to boiler capacity, radiation, and piping distribution.

2. The system must be designed so that it cannot become air bound.

Presence of air pockets within the system interferes with water circulation and produces noise. In order to relieve the system of air it must be provided with automatic air valves.

3. The system must be designed, insofar as possible, so that it will not "short-circuit."

"Short-circuiting" seriously interferes with or stops the functioning of the short-circuited portion of the system: "Short-circuiting" can be avoided by designing the entire system so that the pressure drop is the same through each branch circuit at the rate of water-flow necessary to carry the load upon the branch circuit. A certain amount of short-circuiting may exist under certain unbalanced load conditions, even in a well-designed system.

4. All pipe lines and connections must be arranged so that there is no strain due to expansion and contraction, in order to prevent breakage and leaks due to such strains.

Hot Air

The hot air heating system enjoys considerably popularity. In the past, this has been true largely because of its low initial cost, the gravity system consisting of furnace, ducts, and registers, which depend upon the rising tendency of heated air for circulation being the most economical, satisfactory method of heating known in regard to first cost.

The principal disadvantages of this type of system are the space required by ducts, the fact that the furnace must be located in the center of the basement, and principally the difficulty in obtaining equal temperature distribution, largely because of the susceptibility of this type of system to velocity and direction of wind.

At present, the hot air system using a fan to produce forced circulation enjoys considerable popularity because it is so readily adaptable to use in connection with the conditioning and distribution of air.

With the modern forced hot air system, the difficulties enumerated above have been largely eliminated. The use of the fan makes unnecessary the locating of the furnace near the center of the basement, allows ducts to be placed out of the way between joists, permits the use of smaller ducts, and allows good distribution of air regardless of outside winds and climatic conditions.

The heating element may be a system of hot water coil or a hot air furnace. Although the modern forced hot air system eliminates many of the weaknesses of the old gravity job, to a considerable extent, it has lost its virtue of low initial cost also, for many engineers and manufacturers make use of a system which involves inlet and outlet grilles at the floor level, and a great multiplicity of supply and return ducts.

The locating of supply grilles at the floor level renders difficult or impossible the proper distribution of air if the system is to be used for summer conditions, while the duct system may be greatly simplified without penalizing comfort. In fact, with proper design, the result will be a very satisfactory system, and yet one which retains much of that desirable old-fashioned virtue of the gravity system—low first cost.

To be properly designed, the system must have these three characteristics:

1. As a matter of course, the system must be ample as to heating capacity, air delivery, and distribution system.

2. Air must be delivered to the conditioned space at the proper velocity, direction, and location so as to obtain good air and temperature distribution, and avoid drafts, or "dead" areas. (Study section No. 5).

3. The system must be designed so that it is quiet.

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DETROIT—Expansion of manufacturing facilities of Gar Wood Industries, Inc., through construction of an addition to the Highland Park plant, has been announced by C. W. Wood, plant manager.

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COMMERCIAL Service Manual

By K. M. NEWCUM

Operation and Construction of Water Regulating Valves

CHAPTER 6—Commercial Condensing Units—Continued

Water Regulating Valves

The water-regulating valve, as the name implies, is the valve installed between the city water supply line and the water-cooled condenser to regulate the amount of condensing water supplied to the condenser. This valve is more commonly known as, and will be called, "water valve."

Water valves are usually furnished as a part of the condensing unit, connected to the condenser.

There are two main types of water valves, namely, electrically operated, and pressure operated. The latter is used in the large majority of cases.

A Kelvinator model "A" electric water valve is shown in Fig. 78. This valve works on the magnetic principle and the coil part (25) is connected into the motor control circuit. The city water is connected to inlet (1) and water outlet (10) is connected to the condenser.

When the motor control cuts in to start the compressor, the magnet is energized causing the armature to lift—lifting adjusting screw (15) against valve stem (12) against the pressure of the spring (14) lifting the valve ball seat off the seat which in turn admits condensing water through the valve to the condenser.

The valve remains open so long as the compressor is in operation, and closes when the compressor stops as the magnet is then de-energized.

This type of valve does not regulate the supply of water as needed for varying loads and water temperatures. It is necessary to manually adjust the flow of water at different seasons of the year, wth a hand controlled gate or globe valve installed in the water line ahead of the water valve.

The electric water valve may be considered uneconomical for when it is open it allows a full stream of water to flow through the condenser, which is not necessary under all conditions.

It is suggested that where an excessive amount of water is being used with the electric-type water valve that it be replaced with a pressure-actuated type.

Pressure-actuated water valves differ only in that one design may use a bellows to obtain the movement necessary to operate or actuate the valve to close against the pressure, while others close with the pressure.

In all respects their purpose remains the same; that is, to automatically supply the necessary amount of cooling water to effect condensation within pressure ranges commensurate with current and water cost to result in economical and efficient condensing unit operation at peak capacity with varying water temperatures and refrigeration demands.

The location of the water valve may be noted in Fig. 79. It is shown here connected to the bottom of a tube within a tube or double tube condenser. The water tube in this case is the inside or smaller tube.

The actual water valve shown in Fig. 79 is the Tag valve illustrated in Fig. 80. It is of the combination bellows and diaphragm type and the valve closes against the water pressure.

Note in Fig. 80 the pressure connection from the bellows is connected by ¼-in. copper tubing to the high-pressure discharge side of the compressor.

With the compressor idle or on the off cycle, the pressure on the high side of the system is reduced and the water-valve spring keeps the valve closed.

When the compressor starts the on cycle, the high pressure in the compressor head condenses, hence the pressure bellows increases. With this gradual increase in pressure the bellows is elongated or forced downward against the pressure of the spring and the valve opens slightly, allowing water to flow into the condenser.

The colder water flowing into the condenser tends to lower or balance the head pressure and the valve then remains open just sufficiently to keep this stream of regulated water flowing through the condenser to keep the head pressure at an even economical point throughout the on cycle.

If during the cycle some extra refrigeration load comes onto the system as, for example, a snap action valve opens an additional coil into the circuit, forcing a greater amount of heat laden gases into the condenser, this extra load would tend to increase the head pressure slightly which in turn further elongates the bellows and opens the valve wider, allowing additional condensing water to take care of this great demand.

Through all of this, the actual operating head pressure is affected only slightly, because the water valve automatically admits more or less water as needed to compensate for these varying conditions.

Most water valves are made to operate satisfactorily with city water pressures up to 100 lbs. They may be obtained to accommodate higher water pressure if necessary.

The operating head pressure range will run from 40 to 100 lbs. on some models while others will operate satisfactorily up to 185 lbs. on the high side.

The high side pressure range is determined by the refrigerant involved. Sulphur dioxide has the lowest operating head pressure with methyl chloride next and Freon-12 the highest.

The valves are usually adjusted at the factory to supply the correct amount of water and to result in the most economical head pressure for the refrigerant and system involved.

Commercial water cooled condensing unit capacities are rated by some manufacturers at 75° F. inlet water temperature and 95° F. outlet water temperature.

Under these water temperature conditions the actual amount of condenser surface is determined. The condenser surface is largely determined by the refrigerant involved and the suction or back pressure at which the compressor will operate, as the actual displacement or capacity of the compressor is governed by the back pressure.

Kelvinator Model

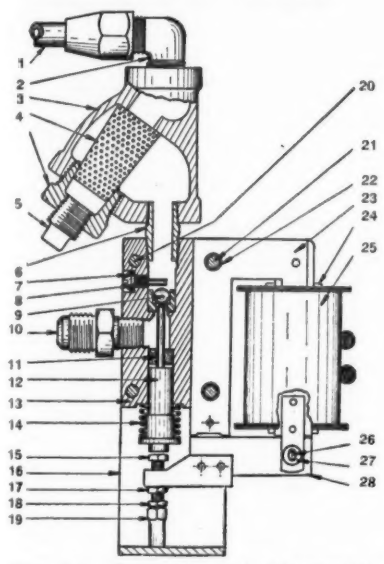

Fig. 78—Operation of this model "A" Kelvinator electric water valve is described above.

Commercial System

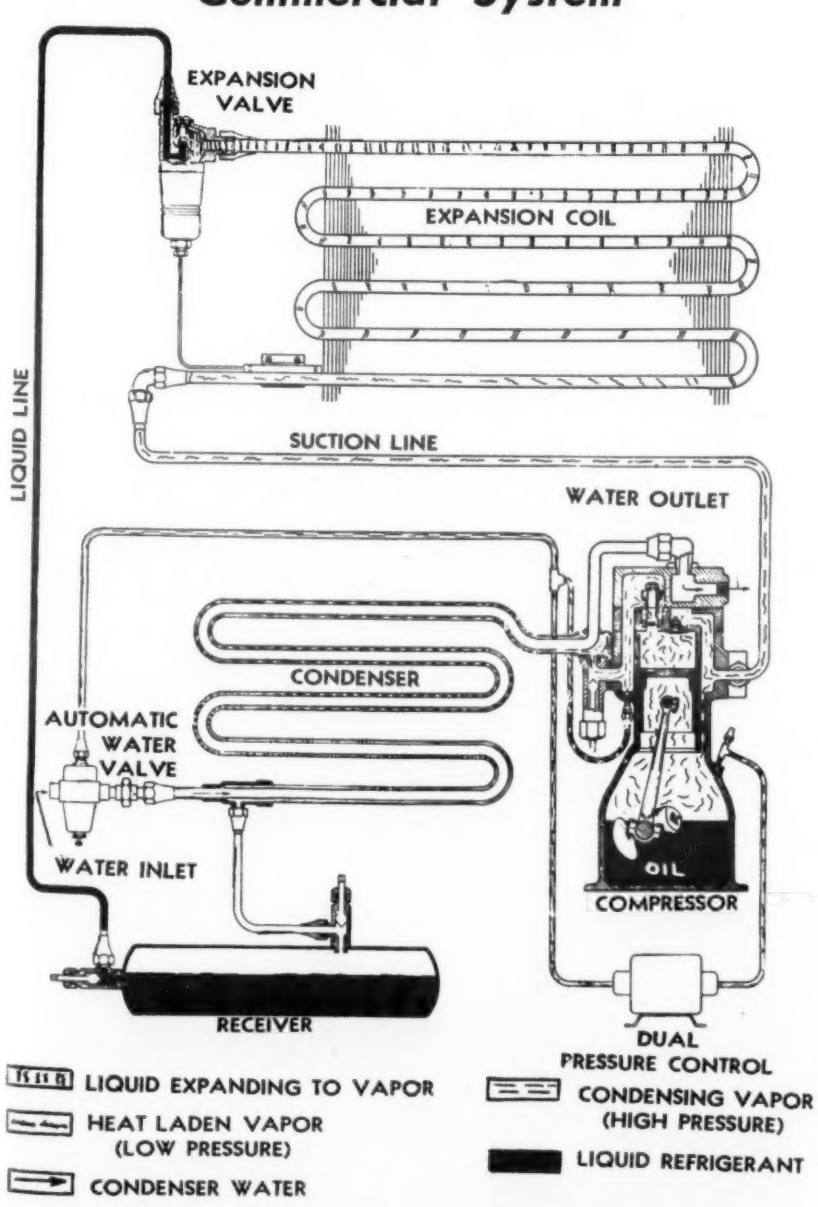

Fig. 79—This sketch of a refrigeration system shows the location of the principal parts including the water valve (lower left).

Tag Valve

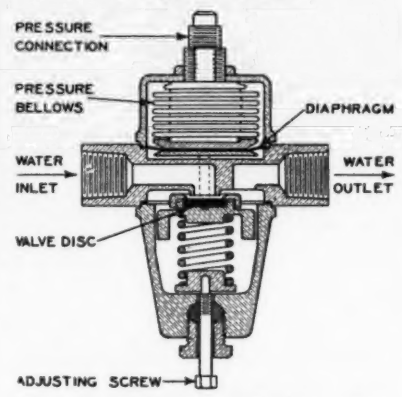

Fig. 80—Water circulating valve made by Tagliabue.

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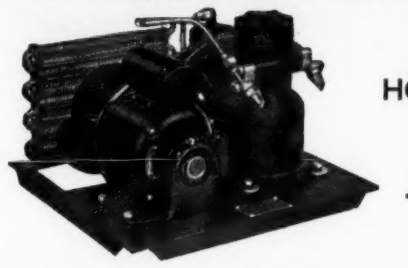

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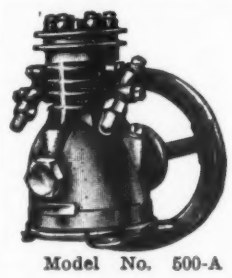

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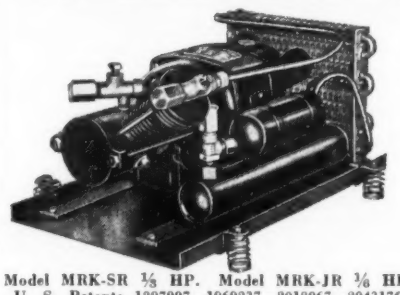

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REFRIGERATION AND AIR CONDITIONING is easiest to understand and explain when we have a clear understanding of the fundamentals. Our extension course is especially practical for executives and others in refrigeration and air conditioning who lack the technical training. Detroit School of Refrigeration and Air Conditioning, 4125 Grand River, Detroit.

2 New Belts Introduced By Manhattan

PASSAIC, N. J.—Two new styles of Condor Compensated belt, known as Styles "F" and "B," have been developed by the Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc. Both styles have the patented Condor principle of equalized ply stresses at the arc of contact, but are especially designed for those conditions which require some slip rather than the usual friction for low-tension operation.

Style "F" has a red friction pulley surface and is designed for use where a slight starting slip is desired, while Style "B" has a bareback untreated duck pulley surface and is built for conditions requiring a greater slip, or where slip is essential, as in the case of winder drives.

23 Special Home Bulletins Prepared by Utility

FAIRMONT, W. Va.—Twenty-three special bulletins have been prepared during the last year by the home service department of Monongahela West Penn Public Service Co. to aid housewives in solving their homemaking problems.

Fifteen of the bulletins relate to home laundry problems. The remaining eight deal with treatment, care, and use of the electric mixers, cooking with an electric roaster, waffles as the foundation for "different" meals, new dishes with toast, grilled sandwiches, electrically prepared coffee, cold cooking with an electric refrigerator, and home home lighting.

Patents

Issued October 27, 1936

2,058,390. THERMOSTATIC SWITCH. Clarence F. Alban and Stanley R. Hood, Detroit, assignors to W. M. Chace Valve Co., Detroit. Application May 1, 1935, Serial No. 19,261. 8 Claims. (Cl. 200—139)

2,058,405. AIR CONDITIONING UNIT. Kemper Penn Brace, New York. Application Oct. 24, 1932, Serial No. 639,186. 9 Claims. (Cl. 62—129)

2,058,426. THERMOSTAT. George Forrest Drake, Rockford, Ill., assignor to Howard D. Colman, Rockford, Ill. Application Jan. 3, 1933, Serial No. 649,897. 12 Claims. Cl. 200—139)

2,058,458. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, assignor, by mesne assignements, to General Motors Corp. Application April 30, 1931, Serial No. 533,999. 8 Claims. (Cl. 62—108.5)

2,058,593. REFRIGERATING APPARATUS. John Karmazin, Huntington, Ind., assignor to General Motors Corp., Dayton. Application April 13, 1935, Serial No. 16,208. 2 Claims. (Cl. 189—84)

2,058,669. AIR FILTER. Lewis L. Dollinger, Rochester, N. Y., assignor to Staynew Filter Corp., Rochester, N. Y. Original application Oct. 26, 1932, Serial No. 639,669. Divided and this application March 13, 1935, Serial No. 10,873. 13 Claims. (Cl. 183—71)

2,058,864. REFRIGERATING APPARATUS. Martin J. Goulooze, Grand Rapids, Mich., assignor to Kelvinator Corp., Detroit. Application March 30, 1934, Serial No. 718,189. 2 Claims. (Cl. 211—143)

2,058,871. REFRIGERATION APPARATUS. Delos P. Heath, Detroit. Application Jan. 2, 1931, Serial No. 506,287. Renewed April 12, 1934. 8 Claims. (Cl. 62—126)

2,058,872. REFRIGERATING APPARATUS. Fred J. Heideman, Detroit, assignor to Kelvinator Corp., Detroit. Application June 2, 1932, Serial No. 614,956. 1 Claim. (Cl. 62—117)

2,058,906. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, assignor to Kelvinator Corp., Detroit. Application May 3, 1932, Serial No. 608,941. 11 Claims. (Cl. 62—116)

2,058,907. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit. Application Sept. 9, 1932, Serial No. 632,323. Renewed Sept. 29, 1934. 1 Claim. (Cl. 62—126)

2,058,908. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, assignor to Kelvinator Corp., Detroit. Application June 26, 1933, Serial No. 677,655. 9 Claims. (Cl. 62—3)

2,058,916. REFRIGERATING APPARATUS. Edmund F. Schweller, Dayton, assignor to General Motors Corp., Dayton. Application May 20, 1935, Serial No. 22,334. 7 Claims. (Cl. 62—116)

2,058,919. AIR CONDITIONING APPARATUS. Henry R. Sewell, Jamaica Plain, Mass., assignor to B. F. Sturtevant Co., Hyde Park, Mass. Application Jan. 17, 1933, Serial No. 652,166. 4 Claims. (Cl. 257—9)

2,058,973. AIR COOLING AND CONDITIONING APPARATUS. Justus C. Goosmann, New York. Application Aug. 10, 1934, Serial No. 739,213. 9 Claims. (Cl. 62—129)

2,059,016. REFRIGERATOR. Delbert F. Newman, Schenectady, assignor to General Electric Co. Application June 11, 1935, Serial No. 25,990. 9 Claims. (Cl. 62—116)

2,059,042. REFRIGERATING APPARATUS. Sylvester M. Schweller, Dayton, assignor, by mesne assignements, to General Motors Corp. Application Jan. 27, 1932, Serial No. 589,247. 5 Claims. (Cl. 50—26)

2,059,065. ICE CREAM HARDENER. George E. Tuscan, Wollaston, and Wilfred F. Mathewson, North Weymouth, Mass. Application March 23, 1933, Serial No. 662,262. 5 Claims. (Cl. 62—95)

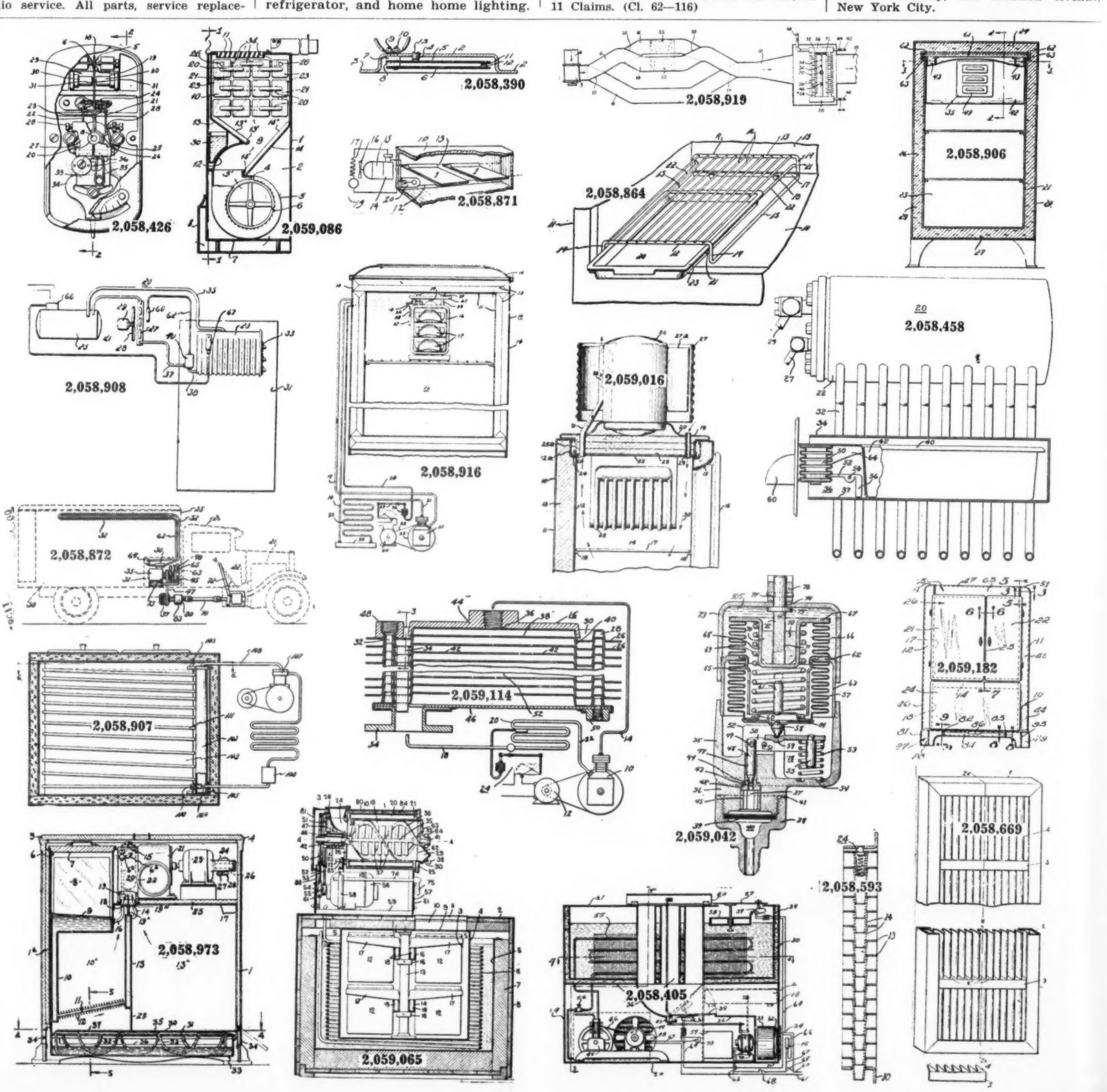
2,059,086. VENTILATING AND AIR TREATING APPARATUS. Harry E. Campbell, Baltimore, assignor to Campbell Metal Window Corp., New York. Application June 8, 1933, Serial No. 674,798. 9 Claims. (Cl. 257—9)

2,059,114. REFRIGERATING APPARATUS. John Karmazin, Huntington, Ind., assignor to Karmazin Engineering Co. Application May 31, 1935, Serial No. 24,278. 9 Claims. (Cl. 257—245)

2,059,182. CABINET DESIGN. Leonard H. Darbyshire, Detroit, assignor, by mesne assignements, to Borg-Warner Corp. Application Oct. 9, 1933, Serial No. 692,882. 13 Claims. (Cl. 220—9)

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.



Commercial Uses

Temprite Builds Portable Beer Coolers for Use of Salesmen in Showing Prospect How Unit Works on the Job

DETROIT—To enable its distributors to demonstrate more effectively its line of beer cooling equipment, Temprite Products Corp. has introduced a completely self-contained demonstrating unit, built around a ⅓-hp. air cooled compressor and fitted with accessories, so that it may be put into use under regular bar room service conditions.

The equipment may be fitted up for serving beer simply by plugging it into the nearest electric outlet and connecting it to the keg of beer. Even a tapping rod has been provided.

The demonstration unit is small in size, and completely portable, and can be conveniently transported by the salesmen on the trunk rack of his automobile.

In practice, the demonstration unit is taken to the premises of the tavern owner, and rolled behind the bar or some other convenient location, where it is connected to the barrel of beer. The unit, if desired, may be left with the tavern man for a whole day's trial, for in addition to being a demonstrator it is also a practical beer dispensing device.

Already this "show-me" campaign is beginning to show results, reports Temprite's sales manager, John Wyllie. Orders for both demonstrators and regular equipment are being received from distributors in greater numbers than ever before, he says.

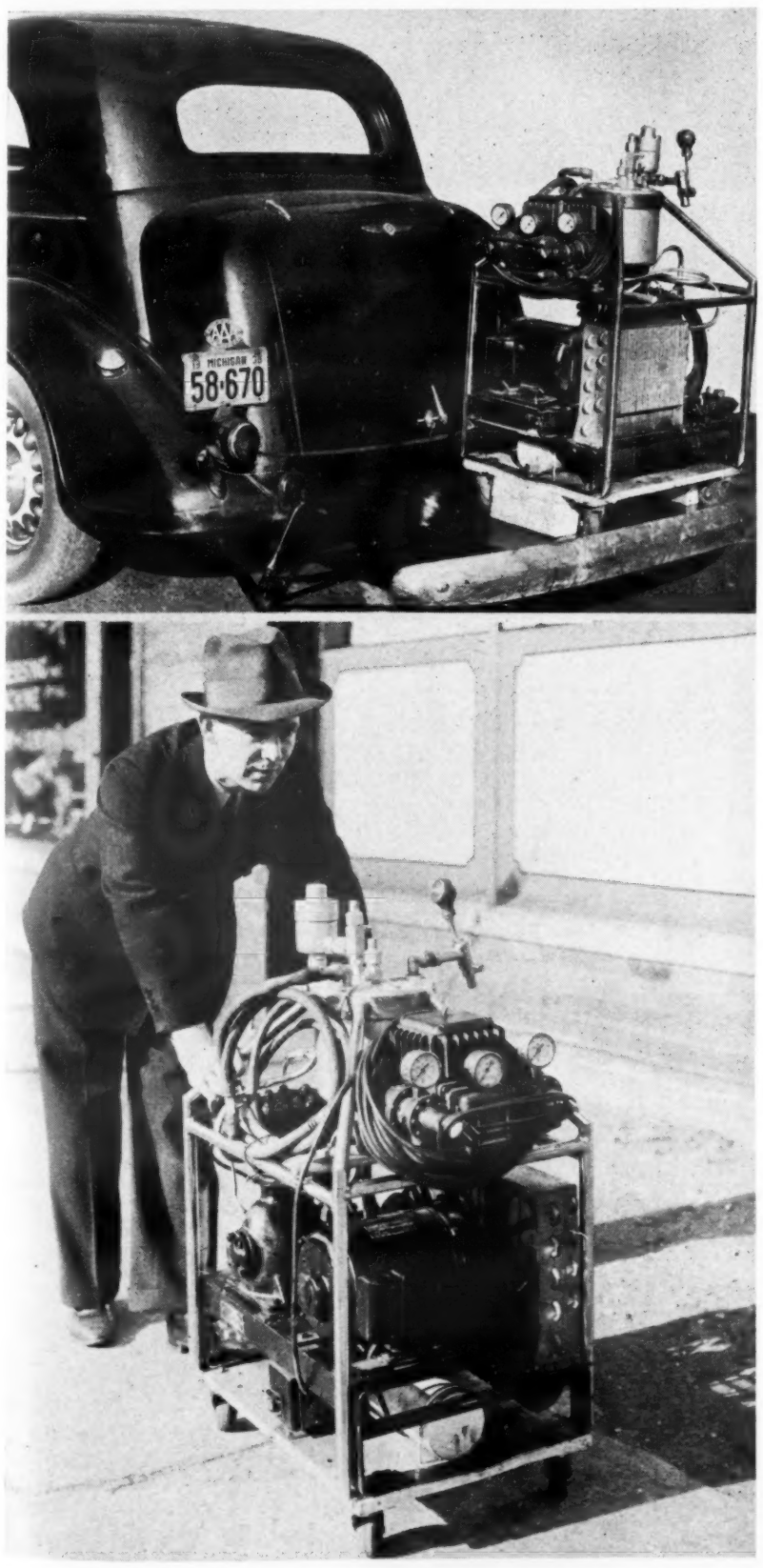
"On the repeal of prohibition, the beer cooling market became flooded with so-called mechanical beer cooling systems, many of them unreliable and constructed without knowledge of the problems involved," Mr. Wyllie said.

"A goodly number of these have passed out of the picture, but not without leaving a trail of trouble in their wake. In performance, some of the systems sold could not possibly live up to their claims. Not only were dispensers disappointed and angry, but they also spread the bad news among their brethren, with the result that many are under the opinion that all mechanical beer coolers are in the same class.

"Representatives of legitimate equipment were severely handicapped by this impression, for the tavern owner frequently took the attitude of declining to hear their sales story at all.

"Temprite arrived at the conclusion that the only effective way to combat this state of mind was to demonstrate Temprite claims to efficiency by actual results under usual service conditions in the tavern owner's bar room."

Selling by Showing



The new Temprite demonstration outfit in the company's "show-me" campaign is already producing results, John Wyllie reports. The unit is a thoroughly practical beer dispensing device, and may easily be left with the tavern owner for a day's trial, or any other demonstration period. The apparatus is small and portable, and may readily be transported on the trunk rack of a car, as shown in the top picture.

New Beverage Cooler Line Put on Market By Kelvinator

DETROIT—Three air-cooled beverage coolers with self-contained condensing units comprise the new line introduced by Kelvinator Corp. at the convention of American Bottlers of Carbonated Beverages, held recently in Chicago.

Models of the new line feature a finger-touch control top, which makes both sides of the cooler space easily accessible and elminates the need for overhead space required by other type coolers, claims A. H. Reinach, manager of Kelvinator's standard commercial division.

Called the "Mono-Rail" stainless steel finger touch control, this top operates on roller guides placed on each side under the lids; special flanges make the lids drop into place when closed. Finish of the models is in red, green, or white.

All three models have condensing units of two-cylinders, and are equipped with a ¼-hp. motor. Two new models are offered with a double sized cooler for bottled beer.

The beverage coolers can be obtained with a simplified vending device, attached so that the units may be used in offices, factories, schools, and other places where services of an attendant may be impossible; the buyer inserts a coin and obtains the beverage he desires.

Entire sales efforts of Kelvinator Corp. to promote the new line will be aimed at the retailer of bottled beverages, states Mr. Reinach.

Hussman-Ligonier Offers Small Size Display Case

ST. LOUIS—Allied Store Utilities Co., manufacturer of Hussmann-Ligonier refrigerated display cases, has just introduced a new model known as the "Merchant's Helper," a unit 5 feet long, 2 feet 10 inches wide, and 4 feet 6 inches high.

The case is designed for use by grocers, delicatessens, taverns, bakeries, restaurants, and other establishments requiring refrigerated display for perishable foods.

Because of its small size, the unit can be moved from place to place in the store to spotlight customer attention on various "specials." Equipped with heavy attachment cord, the case can be plugged into any convenient outlet.

The unit is completely coiled, and includes condensing unit. The condensing unit takes up half of the case's lower compartment, the other half being available for storage.

Exterior finish is porcelain, with wide display glass. Interior has 18 sq. ft. of display space in its three shelves. Display space itself is porcelain lined; storage compartment interior is lined with stainless steel. An adjustable wrapping shelf is standard equipment.

RMA Elects A. H. Baer First Vice President

WASHINGTON, D. C.—A. H. Baer, vice president of the Carbondale Machine Corp., Harrison, N. J., was elected first vice president of the Refrigerating Machinery Association at the annual meeting here recently.

Elected to serve on the Association's executive committee for the ensuing year, were:

D. Norris Benedict, vice president and general manager, Frick Co., Inc., Waynesboro, Pa.; G. A. Heuser, secretary-treasurer, Henry Vogt Machine Co., Louisville; J. I. Lyle, president, Carrier Corp., Newark; W. S. Shipley, president, York Ice Machinery Corp., York, Pa.; and Emil Vilter, chairman of the board, The Vilter Mfg. Co., Milwaukee.

Kold-Hold Units Cut Cost of Cooling Storage Room

CINCINNATI—French Bauer, Inc., here, recently installed Kold-Hold cooling units in its storage room, resulting in a considerable decrease of operating costs, according to reports.

During the test period between May 9 and May 23, total current consumption was 203 kwh., costing an average of 34 cents per day. Prior to the installation of Kold-Hold, 1,500 to 2,000 lbs. of ice were required per day, at an average daily cost of $4.50 per day. Thus a saving of $4.16 per day was effected.

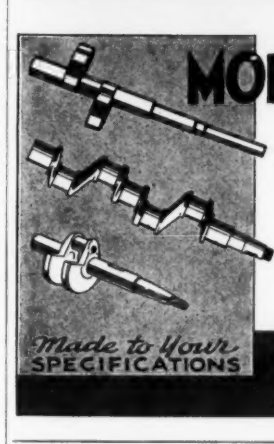
Temperature with ice was 60 to 70° F.; with Kold-Hold it ranges from 38 to 46° F.

The storeroom is equipped with three model F-259 Kold-Hold units and a Kelvinator condensing unit.

Installation was made through Bode-Finn, Inc., of this city.

The Buyer's Guide

Special rates apply to this column only.
Write Advertising Dept. for full information.



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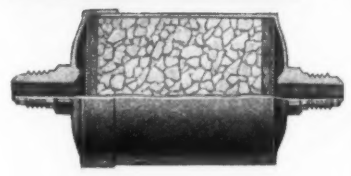

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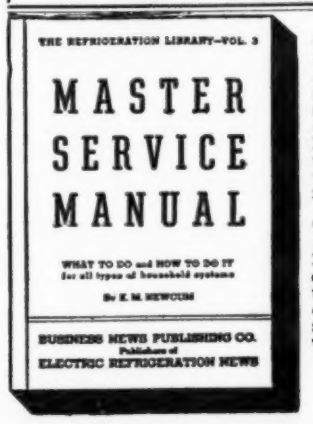
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